

RADIO CONTROL

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car action

THE WORLD'S BEST-SELLING
RC CAR MAGAZINE

POWER UP!

**4 BIG
UPGRADES** YOU NEED
NOW page 84

FIRST LOOK!

HOT BODIES

HOT

BUGGY

Lightning
RR

THINK FAST

Behind the wheel
with the **OFNA DOMINATOR**

SIRIO KILLER!

SEE TRINITY'S NEW ENGINE FIRST page 31

www.rccaraction.com

Tamiya F2001
Four-wheel-drive F1!

OFNA MBX R2 Plus
Nitro RTR powerhouse!

Serpent Impulse Pro
Super snake!

Dynamite Rocket Racer
Mini-machine, pan-car
performance!

AirAGE
PUBLISHING
JULY 2002

USA \$4.99 Canada \$7.50



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NUMBER 7
JULY 2002

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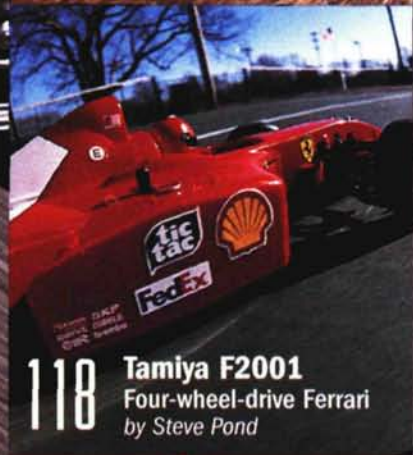
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ON THE COVER: Hot Bodies' new Lightning RR, comin' at ya. Walter Sidas snapped the shot and got out of the way. Also pictured: Trinity's latest engine, the Sirio .21. See the details in "Inside Scoop."

Trend Watching

Remember when trends seemed to come one at a time? If someone asked "What's big in RC right now?," you could confidently answer with a simple, "Nitro," or "Touring cars," etc. No more! *Everything* is hot now, and predicting which trend will emerge as the big-biggie is just about impossible; but it's fun to try. So here goes

More Maxx-like monsters. This one is a no-brainer; everybody is still playing catch-up with Mr. Maxx, but it's interesting how different the takes are. Kyosho went for smaller truck with the MegaForce and then came way out of left field with the wild and woolly 3-speed Mad Force (which you've seen in *RC Nitro* as "Monster X"). Meanwhile, Tamiya went big (literally) with the upsized Terra Crusher, and both OFNA and DuraTrax have retooled the traditional buggy-monster concept for greater agility in a bid to unseat the Maxx from its king-of-the-hill status. Have any succeeded? Does it matter? All I know is that there are more kick-ass trucks to choose from than ever before!

Minis, micros and tiny stuff. Kyosho reinvented sub-1/12-scale RC with the Mini-Z line; then HPI upped the performance and upgradability of the class with the Micro-RS4 line and simultaneously renewed interest in other micro-machines from BRP, ABC and others. Now Dynamite is on the act with the Rocket Racer (reviewed in this issue), and who knows which cars are coming next? One thing is for certain: they *are* coming!

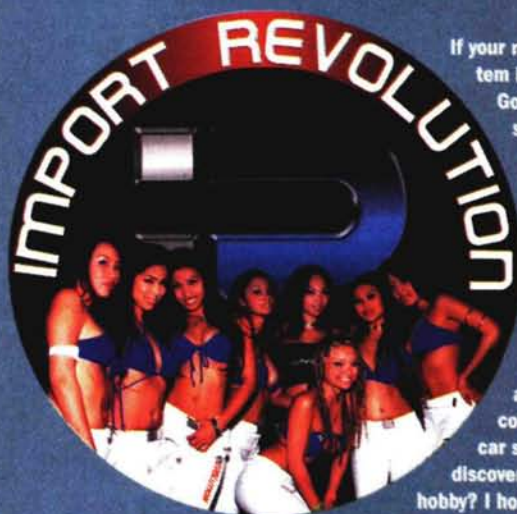
Wild cards. Sorry if I'm spoiling a "Readers' Choice Awards" result for you, but the Nitro Elements ArtAttack snowmobile won in "Best Innovation." You guys dig this thing! And why shouldn't you? It really is cool (wintry pun not intended) and about as different as "something different" gets. The popularity of RC snowmobiles could be limited to the availability of snow, but a lack of snow doesn't seem to slow down full-scale-sled fans, so maybe not.

And what about 4WD F1? Tamiya's F2001 (also reviewed in this issue) is the trickiest F1 car ever; it eliminates all the stumbling blocks that hampered the popularity of yesterday's solid-axle, 2WD designs. Might the F2001 be the car that brings open-wheel RC back to prominence? I hope so. F1 rules!

Just something to think about, gang.

Peter Vieira
Executive Editor

You say you want a revolution?



If your ride is layin' out, rollin' on dubs, engine blingin' and system kickin', you'll definitely want to check out the BF Goodrich Import Evolution—but not just because of the sexy sheet metal on display. In addition to unbelievable show cars, bikini-clad models, music and general motor mayhem, you'll find a new four-wheel wrinkle on the scene: RC!

Radio Control Car Action has partnered with Vision Entertainment to host an RC Car Action Zone at three Import Revolution events; the theme?—"Nitro/Micro Revolution." Demo cars will be available for show attendees to sample, and there will be RC manufacturer displays to check out. It's gonna be huge, and everybody wins; if you're into RC, nothing could be cooler than a getting a little wheel time at an awesome car show, and for the Import scene makers who haven't yet discovered RC ... well, how will they be able to resist joining the hobby? I hope to see you there!

Look for the RC Revolution at the following Import Revolution Events

Anaheim, CA—May 25

San Mateo, CA—August 31

Chicago, IL—October 26

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www.importrevolution.com

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PRINTED IN THE USA



YOU'RE WELCOME

"Micro-Car Meltdown" (June 2002) was awesome! Showing the cars' actual sizes was brilliant; it really helped me decide which one to buy (I ordered an HPI Micro RS4). I can't wait until it shows up! I also ordered a 6-cell pack for it; 18mph sounds a lot more appealing than 13mph and almost an hour of run time is more than enough. Now, all I need is one of those Speedmind bags and some Hardcore wheels, and I'll be all set! [email]

Ralph Mead

GET REAL

I wonder if Tamiya has ever considered re-releasing the Sand Scorcher? On eBay, those old buggies are selling like gold. My first RC car was a Sand Scorcher, and its realism compared with the real buggy was unreal. Nothing like bombing through mud and sand with a sealed radio box and drive train. Ahh, the memories; I sure miss that thing [email]
Guido

I really agree the realism was really unreal, and I miss those really real cars, too, but don't expect a reissue anytime soon. Despite the devotion of Tamiya collectors, it's doubtful there are enough potential buyers to make a Sand Scorchers reissue a viable business decision, even if it is an emotional no-brainer. For every modeler who fondly recalls the mostly metal Sand Scorchers (or its buggy predecessor, the Rough Rider) and would pay the no-doubt dear cost of a reissue, there are likely hundreds of less history-conscious RC'ers who would see it as an expensive anachronism.

—Pete

IT'S A NITRO THING, NOT A TRAXXAS THING

My brother just bought a Traxxas Nitro Rustler, and he says that I should get one, too; but I want to get a Triple-XNT Sport RTR. Now I'm not sure what to buy because he's had his Nitro Rustler for only a week, and he's had a few problems with it. I have an older Team Losi Junior 2, which is very nice,

and I've only had one problem with it. I'm not sure who to go with: Team Losi or Traxxas. What do you think I should do?

Mike Ferreira
Swansea, MA

I've got a feeling this isn't really a Losi vs. Traxxas thing, Mike; it sounds more like a classic case of electric vs. nitro. Nitro vehicles are more maintenance- and tuning-intensive than electrics and will always have more "problems" than battery-carriers. But the problems generally have nothing to do with the vehicle or engine quality and everything to do with how well it's maintained and how carefully it's tuned. Since your brother already has a Nitro Rustler, I think you should also get one. That way, you'll be able to share parts, your trucks will be evenly matched, and you'll know how to fix each other's trucks. On the other hand, if you're more interested in roosting your brother on a racetrack, can appreciate the extra features of a JR-XR2 radio and want pro-caliber handling, get the Triple-XNT Sport.

—Pete

ANY BODY

I just finished reading the April issue—good stuff! Your article “Budget Blasters!” got me to wondering where I can find aftermarket bodies that will fit the Evader. I would appreciate your help; keep up the good work.
[email]
Steve

If you're looking for direct-fit,
designed-for-the-Evader bodies,

ya got me; there aren't any. But with creative trimming, you can make just about any body fit any vehicle. Adapting a stadium truck intended for one brand to fit another can be as simple as relocating the body-post holes. I've found that bodies designed for Team Losi's Triple-XT are the best fit on the Evader. Bolink, Pro-Line, Parma, Hot Bodies and others have bodies that you can make fit, and Trinity will probably be in on the act soon with a Reference shell, too.

—Pete

ALEX'S IDEA

You guys must have so much fun making those killer project cars; you have everyone's dream job. Why not let more people in on the fun? You spend \$2,000 bucks on a project. I will never get to spend that, have my car look like that or have that much fun—and neither will thousands of other *RC Car Action* readers. My parents think it's crazy to spend \$300 dollars on an RC car project, but I would spend \$5,000. What I suggest, is that you have a special column in which every month a reader gets to choose a car and customize it any way he wants. They should get to write about the experience of building and driving it, and they should also get to keep it. This awesome idea would let the average RC'er have a whole bunch of fun. [email]

Alex Teehee

Sounds great, but how many all-aluminum T-Maxxes does the world really need?

—Pete

WRITE TO US! Email addresses are below. Small-mail letters should be addressed to "Readers Write; Air Age Inc., Route Control Car Action, 100 East Ridge, Ridgefield, CT 06877-4008 USA. Letters may be edited for clarity and brevity, and each must include a full name and address or telephone number so that the identity of the sender can be verified. We regret that, owing to the tremendous numbers of letters we receive, we can't respond to every one.

- Peter Vieira: peterv@airage.com
- George M. Gonzalez: georgem@airage.com
- Bob Hastings: bobh@airage.com
- Kevin Hetmanski: kevinh@airage.com
- Paul Onorato: paulo@airage.com
- Steve Pond: stevep@airage.com
- Greg Vogel: gregv@airage.com

YOU SAID IT

“RC is not nerdy”

I was on an Internet RC bulletin board and found a thread that amazed me. It said that RC is nerdy. My jaw almost hit the floor. Anyone who thinks RC is nerdy is either doing something wrong or thinks they are too cool for it. When I run my T-Maxx or my Maximum ST-Pro, people gather all along my street to see what the commotion is, and they are amazed. So far, I have gotten more than four kids into RC, and I only moved to this street four months ago. I hope more will follow. As always guys, keep up the great mag. [email] Alfred Hummel

I, for one, would never consider myself to be a nerd. I'm more of a geek.
—Pete

Trinity

Sirio Killer

Sirio .21, Outlaw .12 & ROAR .12 engines

Trinity has announced it will be the exclusive distributor of the Italian Sirio engine and accessories line, which will bring Trinity into the high-performance, .21-engine market. The hall-

mark feature of these engines is their AAC construction

(Aluminum piston, Chrome-plated Aluminum

sleeve). An aluminum sleeve has

important advantages; it will expand and

contract at the same rate as the aluminum piston.

That allows

the engine to

maintain its

tolerances at high operating

temperatures, and its performance

will be consistent from start to finish.

At press time, Trinity plans to

offer three Sirio engines: the

SP21BR Pro off-road .21 buggy

engine, SP12TR ROAR-legal .12

and the SP12TRP Pro, an "outlaw"

5-port engine.

Trinity Products (732) 635-1600;

teamtrinity.com.

SP21BR PRO .21 BUGGY

- AAC piston and sleeve
- Turbo head
- Hardened turbo crank
- Hardened carburetor barrel insert
- 3-needle carb with ball joint and rubber boot
- Carb accepts 7-, 7.5-, 8-, 8.5- and 9mm restrictors

SP12TRP PRO OUTLAW (SG shaft)

SP12TRP PRO T (threaded shaft)

- "Outlaw" (not ROAR-legal)
- 5-port design
- AAC construction
- Button turbo head
- Slide carb

SP12TRP (SG shaft)

SP12TRPT (threaded shaft)

- ROAR-legal ABC piston and sleeve
- 4-port design
- Slide carb



IT'S IN THE BAG TRINITY ENGINE CASE

IF you're so serious about nitro racing that you bring backup engines and alternate pipes to the track, then this is one item you need to get. Using the same fabric case and heavy-duty-cardboard inner box as its battery and motor bags, Trinity has constructed a new engine and pipe carrier with a fitted-foam liner that guarantees your precious powerplants and their premium pipes will arrive without bent needles, dented bodies, or otherwise dinged. Another advantage of using one of these bags is that you'll look like the baddest nitro pimp in the pit when you display your piston-power arsenal. Never underestimate the psyche-out factor.

Trinity Products (732) 635-1600; teamtrinity.com.





Pro-Line's CROWD PLEAZER

for RC10GT

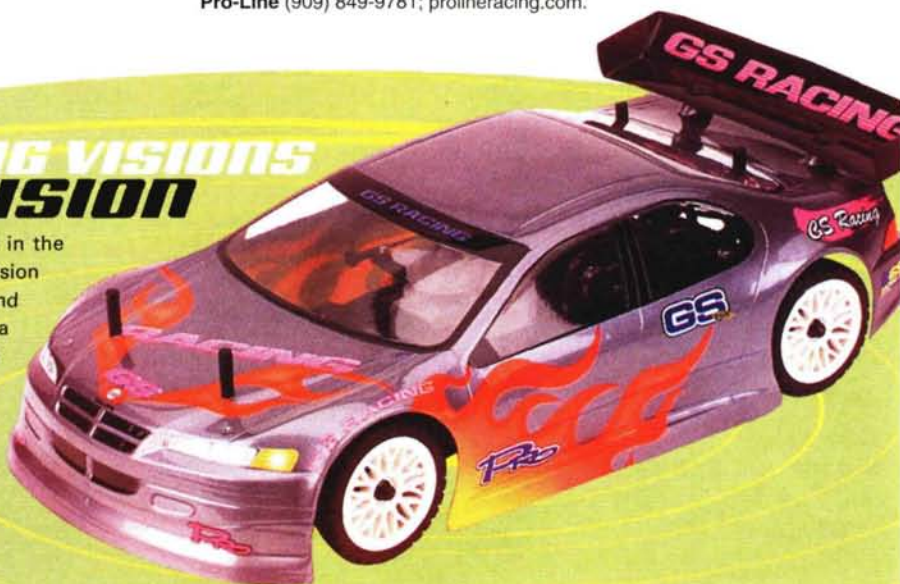
Team Losi's Triple-XNT was the first nitro truck to get Pro-Line's Crowd Pleazer look, and now Associated's RC10GT gets a piece of the action. The mold has been tweaked for the GT, but the Crowd Pleazer concept is the same: slammed and swoopy for a low CG and minimum aero drag. Oh yeah, it looks cool, too.

Pro-Line (909) 849-9781; prolineracing.com.

SEEING VISIONS GS RACING VISION

IN CASE YOU MISSED ITS original appearance in the May edition of "Inside Scoop," the GS Racing Vision will be offered in an RTR version with a JR radio and as a Pro kit with all the racing goodies, including a graphite upper deck and 2-speed. GS sent over a new body-on shot but didn't reveal any new tech stuff. When I learn more, you'll learn more.

GS Racing; distributed by Horizon Hobby Inc. (217) 355-9511; horizonhobby.com.



NITRO TERMINATOR

Removes Nitro Racing Fuel, Oil, Dirt
& Grime. Safe on Most Plastics.

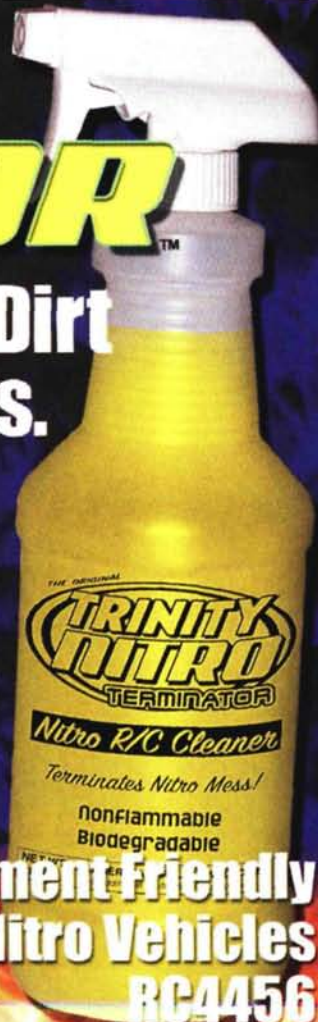
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Way To Clean Your Nitro Vehicles

RC4456



>>> KICK ASTRA

Protoform Opel Astra DTM Coupe

Look closely at the wing on Protoform's new Opel stunner: instead of using nubs molded in the rear deck, separate plastic struts hold up the wing. In addition to looking way more trick than nub-tech, the struts can be trimmed to adjust the wing height to suit your aero needs or sense of style. And, speaking of style, the Astra's rakish profile and flares-to-there look epitomizes touring car good taste. Get the Opel in 190- or 200mm, with window masks, overspray film and decals.

Protoform; distributed by Pro-Line (909) 849-9781; pro-lineracing.com.



TWINKLE, TWINKLE, LITTLE CAR

HPI Micro Light Set & Micro Pro ESC

"WITH BRIGHT BLUE-WHITE HEADLIGHTS AND RED TAILLIGHTS, this will be a hugely popular option part for any Micro enthusiast!" effuses HPI. I gotta agree! The light kit plugs in between the battery and ESC and stays lit as long as the pack has power. HPI also offers optional auxiliary lamps that plug into the light kit for use as driving lights or to create an authentic four-beam look.

In other microelectronic news, HPI now has its own ESC for the Micro RS4. The Micro Pro Control reversing ESC will run any HPI stock or modified motor and requires absolutely no setup—just plug and play. The new Connector Holder Set is included to keep the wiring neat and out of harm's way, and the required motor and battery plugs are installed. The tiny ESC features thermal-overload protection—just in case. HPI Racing (949) 753-1099; hpiracing.com.



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1/10th Oval
1/10th Touring
1/10th Buggy
1/10th Truck

Ball Bearings
Red Anodized

TMF1200, \$45.00



*Reduce vibration in
your drivetrain for a
smoother running
better handling car!*





BIG in JAPAN

SpeedMind Daytona RS

Atsushi Hara is now top gun for HPI and Hot Bodies, but you may recall that the reigning IFMAR touring-car champ was briefly tied to the SpeedMind Daytona, and that caused a stir amongst the competition-touring cognoscenti. Trick as it was, the overseas exotic never made it stateside—until now.

The SpeedMind Daytona RS's impressive list of go-fast goodies includes a carbon-graphite chassis and shock towers, titanium turnbuckles and screws, aluminum threaded shocks, full ball bearings, CV-style universal shafts, rear toe-in plates and more. Keep your eyes open for a track test of the Daytona RS in an upcoming issue.

SpeedMind; distributed by Magma Intl. Ltd. (905) 886-1808; magma.com.

TIRE TAMER

JAC Racing Products Tire Tote

RACERS, REJOICE! there is now an easier way to lug your rubber to the track. The Tire Tote holds four complete sets of 1/8-scale buggy wheels (16 wheels total), and a nylon web handle makes it easy to carry. A pair of thick chassis pads on top lifts the tote double as a pit stand to speed up tire changes. It's built to last and is surprisingly light despite its robust construction. Stands for Maxx trucks, touring cars and trucks are also available. **JAC Racing Products Inc.** (407) 388-1799; jacracingproducts.com.



And your wife says there's no passion left in you.



Radio Control Cars

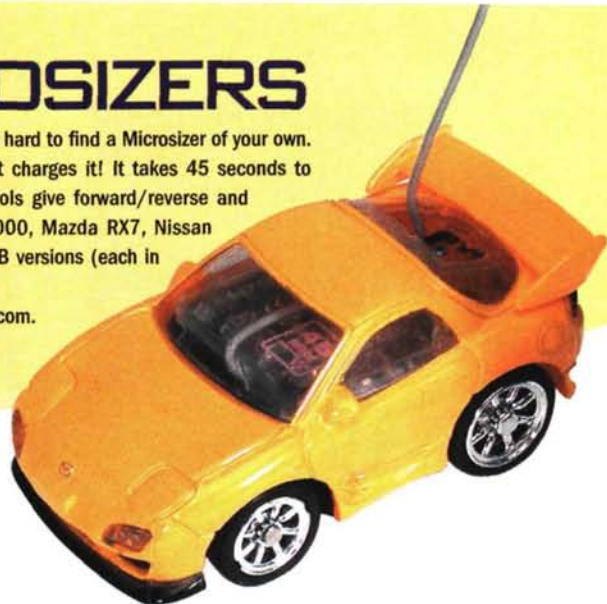
O Scale Engines



LITTLE CAR, LITTLE PRICE **MICROSIZERS**

HOBBICO IS BEHIND THE MICROSIZER LINE so you won't have to look hard to find a Microsizer of your own. The 2-channel, 27MHz transmitter doesn't just control the tiny car—it charges it! It takes 45 seconds to charge the car's Ni-Cd battery for a 2-minute run, and paddle controls give forward/reverse and left/right commands. The MicroSizers will be offered in Honda S2000, Mazda RX7, Nissan Skyline, Toyota Celica, Subaru Impreza, Mitsubishi Lancer and Toyota bB versions (each in two colors), and hop-up parts will be available as well. Pretty cool.

Hobbico/Great Planes Models Distributors (800) 682-8948; hobbico.com.



I won't show my age by reciting the lyrics to the Spiderman cartoon theme song, but I will say that Parma's Spidey-flavored shell does a perfect job of bringing the web-slinger's signature look to RC just as capably as the full-scale version does for the Monster Jam circuit. Aw, what the heck, I'll sing the last line from the Spidey theme song. "Look out ... here comes the Spider-maaaaaaan! In color."

Parma/PSE (440) 237-8650; parmapse.com.

PARMA MONSTER JAM SPIDERMAN

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Monster Kits



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AOL Keyword: eBay



happy hunting™

STAR POWER

HPI NITRO STAR 12R SS ENGINE

HPI's latest Nitro Star mill is standard equipment in the new Nitro RS4 3 SS and is likely to find a home in other high-performance cars as well, thanks to a claimed output of over 1hp and the durability of true ABC construction. A pull-start, 2-needle rotary carb and "aggressive porting" should make the 12R SS a competitive and convenient .12 power choice.

HPI Racing (949) 753-1099; hpiracing.com.



JUST SAY YESS

HPI Nitro RS4 3 TYPE SS

You saw the Nitro RS4 RTR 3 in the June issue; the new Type SS is the kit version, but it's much more than an unassembled version of the RTR car. The you-build-it model includes the new Nitro Star 12R SS engine, which HPI claims is good for more than 1hp. Sounds like enough grunt to pull a tall, single-speed gear ratio, but the new mill won't have to, thanks to the SS car's 2-speed tranny. Engine breathing should be improved as well because of a high-flow tube header. The RTR's best features return with the kit model: fuss-free, shaft-driven 4WD, quick-release radio tray, bevel-gear diffs (with "tuned" front diff), D-compound X-pattern tires, foam bumper and more. HPI is ready to offer the SS kit in Chevy Camaro SS and Acura RSX versions.

HPI Racing (949) 753-1099; hpiracing.com.



PRO-LINE LEXUS LS430

A PICTURE IS WORTH 1,000 WORDS, and since you can see the new shell for yourself, why should I bother penning another 974? The LS430 is available in 190mm and 200mm versions, with factory-applied overspray film, an add-on spoiler with hardware and a detailed decal sheet. Make that 948 words

Pro-Line (909) 849-9781; prolineracing.com. ■



LUXO RACER

readers' rides

YOUR BEST BUILDS



DAVE STRANGE
HAWTHORNE, NV
MUGEN MBX-4XR

According to Dave, his Mugen 1/8-scale buggy hauls! To see for yourself, watch the action at TCI Hobbies track in Hawthorne, NV. The MBX is stock except for the Pro-Line tires used for street running. The buggy is powered by a Collari .21 engine outfitted with an RB Concepts header and pipe, and Dave runs Hitec 945MG servos controlled by an Airtronics M8 radio.

Patriotism has been a popular theme among many of our "Readers' Rides" submissions; what better time to do a little flag-waving than in our July issue!

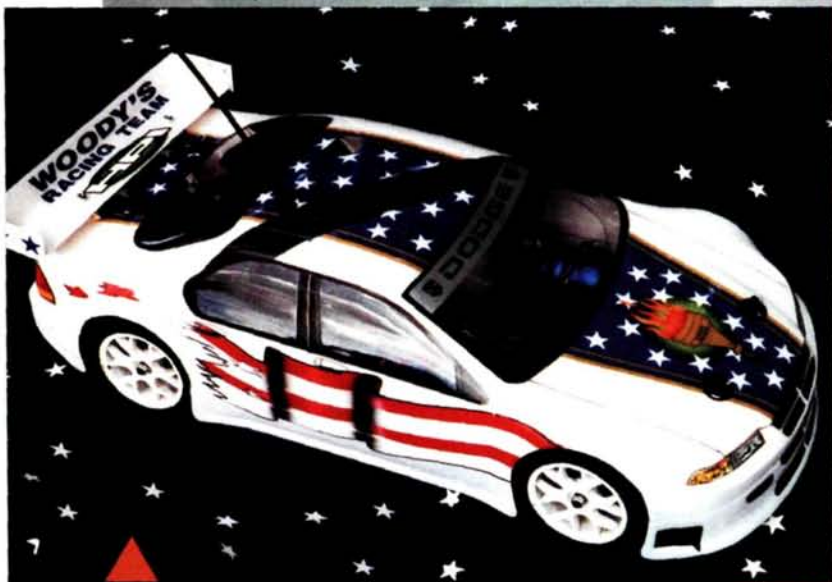
ROBERT RUEKER
LOWPOINT, IL
TRAXXAS NITRO
STAMPEDE

Robert has owned this Stampede for a year and finally got around to painting the shell after he saw the flag "how to" in the February 2002 "Body Shop" column. I think you'll agree, it's a great effort for a first-time painter! Aside from the custom paint, the Traxxas monster sits in stock trim.



GARY HERRMANN
CORAM, NY
TRAXXAS T-MAXX

Beneath the stars and stripes of this Pro-Line F350 body, Gary's T-Maxx has Powerline aluminum shocks, a New Era exhaust header coupled to a CVEC muffler system and aluminum skidplates. Future plans include an engine upgrade and more aluminum components.



MARTIN WOODY
HONOLULU, HI
HPI NITRO RS4

Don't be fooled by the beauty of this Dodge Stratus: it packs a mean punch to back up its good looks. The HPI Nitro RS4 has an aluminum and carbon-fiber chassis with a Novarossi XT 12. The engine is coupled to a Paris 6-ring turbo tuned pipe and a 2-speed tranny for added oomph. Martin controls the sedan with a Futaba 3PJ radio.



WIN A ONE-YEAR SUBSCRIPTION TO RADIO CONTROL CAR ACTION MAGAZINE!

Send a sharp, uncluttered, well-exposed color photo of your vehicle (no Polaroids) and a brief description to "Readers' Rides," *RC Car Action*, 100 East Ridge, Ridgefield, CT 06877-4606 USA. If we publish your photo, you'll receive a free, one-year subscription to *RC Car Action* and will be eligible to win the "Reader's Ride of the Year Contest." Write your address and phone number on your letter and on the back of every photo you send. Good luck!



**TONY KRAMER
APPLETON, WI
TRAXXAS E-MAXX**

Here's an E-Maxx that shows its colors from top to bottom. The body is Pro-Line's Urban Hummer shell with Parma graphics. Tony outfitted the truck with RPM's blue Clawz rims and Pro-Line Maxx Mulcher tires plus a bunch of anodized aluminum from Trinity and Traxxas. A pair of the Trinity Wild 550 motors powers this monster.

**DARYL UNDERWOOD
MADISONVILLE, TN
OFNA ULTRA MBX**

Judging by those three big trophies, Daryl has been quite successful with this OFNA 1/8-scale buggy. Instead of running on a typical off-road "bumps and jumps"-type track, the buggy races on the dirt oval at Speed Zone raceway in Sweetwater, TN. To kick things up for this year's race season, the MBX now has a Novarossi SBK01 powerplant, Picco pipe and JR radio system.



**ELEMENT SERIES
MODIFIEDS**

Unbeatable

• New
Max-Field
1.4mm
can

• Heavy-duty
solder tabs

• High-Strength
"C4" Magnets

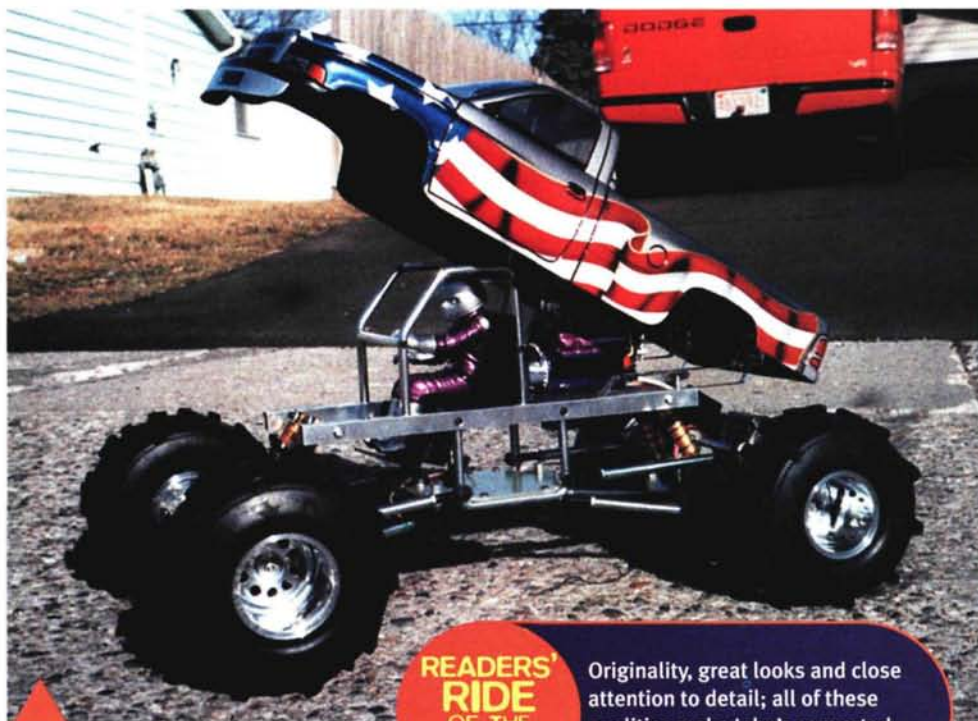
• New vent
design... runs
cooler

Winds Available:

#376 14 Dbl.	#381 9 Dbl.	#393 9 Sgl.
#377 13 Dbl.	#382 8 Dbl.	#394 8 Sgl.
#378 12 Dbl.	#383 7 Dbl.	#340 12 Trp.
#379 11 Dbl.	#390 12 Sgl.	#341 10 Trp.
#380 10 Dbl.	#391 11 Sgl.	#342 9 Trp.
	#392 10 Sgl.	#343 8 Trp.

• #729 Quasar
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**READERS'
RIDE
OF THE
MONTH**

Originality, great looks and close attention to detail; all of these qualities make John's converted Tamiya truck truly stand out.

**JOHN F. BEECHER III
LAFAYETTE, IN
TAMIYA LUNCHBOX CONVERSION**

You'd never know that this burly pickup began life as a Tamiya Lunchbox. This Dodge shed its former van skin and now sports the cool Parma Dodge body. The heart of the truck is a homebuilt and polished aluminum chassis that John calls "The Sting." Check out the subtle details, such as the driver's uniform that matches the inlays on the dummy engine in the truck's bed.

**TONY MARTINEZ
MCALLEN, TX
HPI NITRO RS4 RTR**

Here's a nice combination of paint design and cool photography. Tony's HPI RTR Corvette has MIP CVDs, and the chassis is highlighted by threaded aluminum shocks, a tuned pipe and an aluminum flywheel, too.



Combination!

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Ni-MH "Extreme" Cells**

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Reedy Extreme Cells**
(Cycled, matched, voltage
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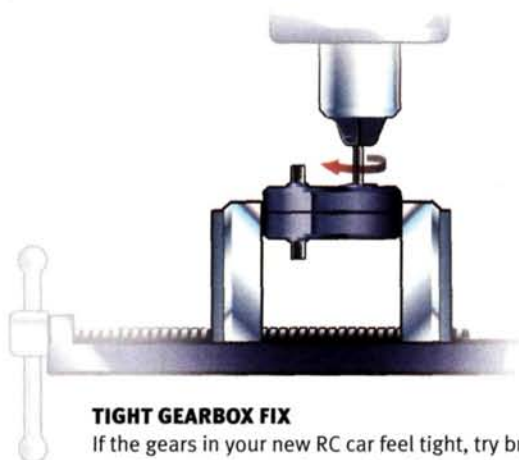
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HINTS, TRICKS, TIPS AND IDEAS FROM READERS LIKE YOU

**TIGHT GEARBOX FIX**

If the gears in your new RC car feel tight, try breaking them in using a drill press. Remove the gearbox from your chassis, chuck the top shaft into the drill, secure the gearbox so it doesn't turn, and let it spin for about an hour. Make sure the outdrives spin freely.

KEN JEFFAN

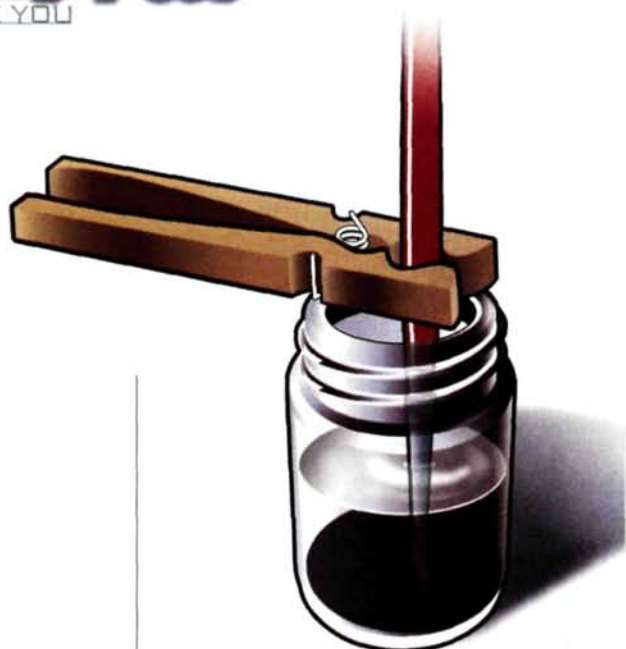
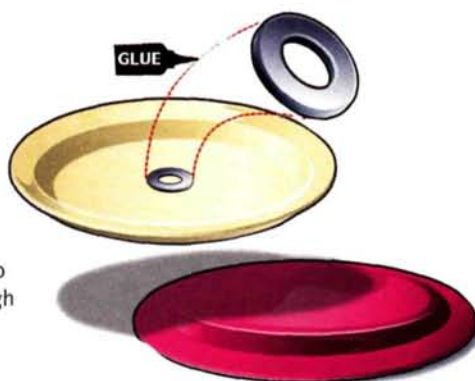
Shamong, NJ

HOMEMADE CORNER DOTS

An inexpensive way to make your own corner dots is by using plastic plates. Spray-paint the bottom of the plates with a fluorescent color of your choice, then glue a large metal washer onto the inside of each plate. The washer adds enough weight to keep the dots in place.

BRAD HALL

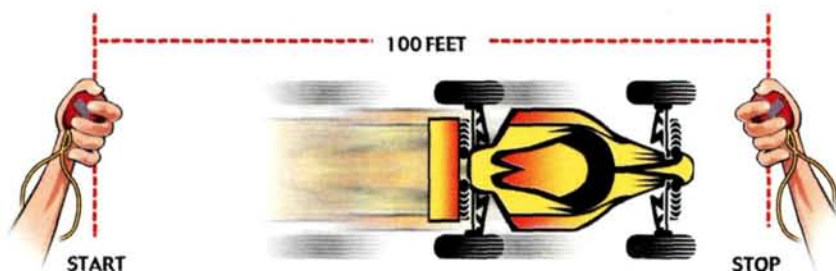
Martinsville, VA

**BRISTLE BUDDY**

When you soak brushes in thinner, use a clothespin to grip the paintbrush so the bristles hang clear of the bottom. This will prevent the bristles from bending.

GREG BOND

Waterford, NJ

**FIGURING OUT TOP SPEED**

Want to figure out how fast your RC car is really going? Make two lines across the track 100 feet apart. Have your buddy stand with a stopwatch between the two lines. He should start the stopwatch when you cross the first line, and stop it once the car passes the second line. (Make sure your car is at top speed when it crosses the first line.) Here is how to calculate your speed: 100 feet divided by the time taken (in seconds); then multiply the answer by 0.68 to arrive at mph. (Mph = distance covered [100 feet] ÷ time taken [seconds] x 0.68). [email]

ANDY KENSON

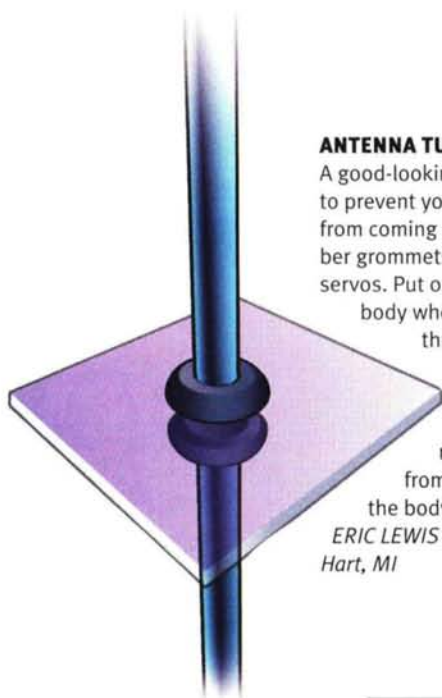
**PAINT MASK OPTION**

Try using hot glue as a mask for painting your bodies. When using a hot glue gun, be sure its tip doesn't touch the body, or the body will melt.

CHARLIE KLASSEN

Baltimore, MD

WIN AN OFNA YO-YO, OFNA OB4 AND RC CAR ACTION SUBSCRIPTION! SEE NEXT PAGE FOR DETAILS.



ANTENNA TUBE KEEPER

A good-looking and effective way to prevent your antenna tube from coming off is to use the rubber grommets that come with servos. Put one in the hole of the body where the tube passes through. If the tube comes off the chassis mount, the rubber grommet will prevent it from coming out of the body.

ERIC LEWIS
Hart, MI



WHEEL KEEPER

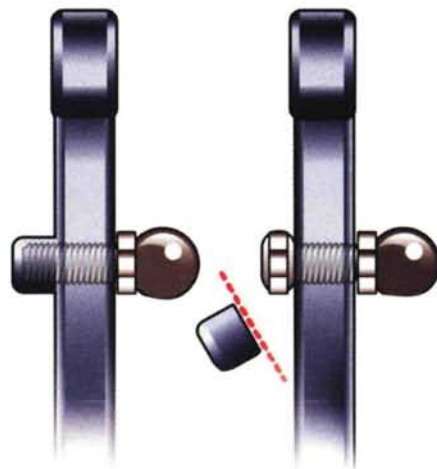
A threaded rod, a nut, two washers and a wing nut are all you need to make an effective wheel organizer/carrier. Put a nut with a washer on one end to act as a stop, place the tires onto the threaded rod, then add the other washer and screw on the wing nut.

BILL BOOTE
Livonia, MI

FUEL DRIP STOP

When you bring your car inside, the residual fuel in the exhaust pipe can drip out and make a mess. Take a cotton swab and insert it in the pipe; the cotton will absorb the leftover fuel.

NICK REZAC
Macedonia, OH



HPI NITRO MT SUSPENSION FIX

The MT's inboard camber link ball ends are prone to breakage. To remedy this, remove the ball end, cut the plastic nub off the front side of the shock tower, replace the ball end, and thread a nut onto it for increased strength.

NELSON DELGADO
Virginia Beach, VA



OFF-ROAD TIRE CONVERSION

If you want to run your off-road vehicle on the street, you can protect the tread and achieve better traction by using an inner tube from a bicycle. Measure the tire's width, and cut the tube to that size; then stretch the rubber onto the tire.

MARK LOIZOU
Yonkers, NY

"Pit Tips" are submitted by readers and are screened for functionality, feasibility and safety but are not tested by Radio Control Car Action. Radio Control Car Action and the submitting authors are not responsible for personal injury or damage to models or tools resulting from readers' use of "Pit Tips."

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YOU'VE GOT PROBLEMS? WE'VE GOT FIXES.

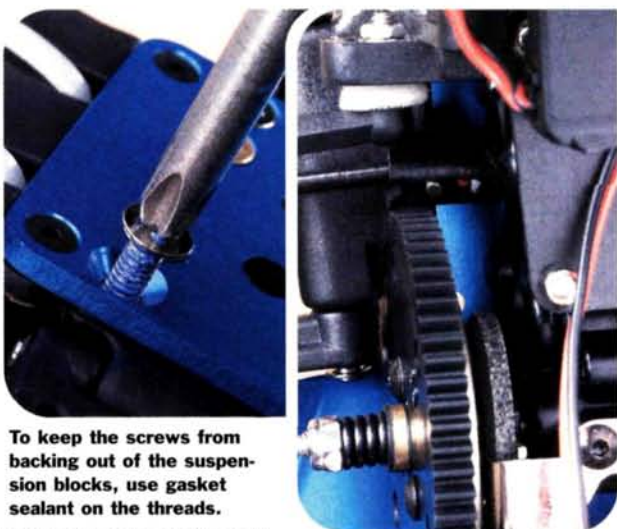
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RRP
 ROBINSON RACING PRODUCTS
GETTING THE BUGS OUT

I hope you guys can help me fix some problems that I have with my brand-new Factory Team GT. I built the truck according to the instructions, but the right rear suspension arm rubs against the spur gear. The space between the spur gear and the portion of the suspension arm that pivots on the inner hinge pin is very small. I thought that I might have improperly installed the rear suspension arm mounts, so I rebuilt it. The problem still exists. I considered grinding the suspension arm slightly, but I'm afraid that I might weaken it. I also have a clutch problem; the truck won't stay still while the engine idles—it always wants to roll away. Any advice? [email]
 Randy Nestor

I've had the same problem with my RC10GT. After looking the truck over I noticed that the mounting screws for the rear blocks had backed out. When they back out even a little, the rear block will move around. As you noticed on your truck, the gap between the gear and suspension arm is very small, and it doesn't take much movement for that suspension arm to hit the spur gear. Remove the screws that hold the suspension blocks in place and coat the threads with a little gasket sealant. Then replace the screws and tighten them. The sealant will prevent the screws from backing out.

The reason your truck wants to roll away when the engine idles is because the idle is set too high. When the engine reaches a certain rpm, the clutch shoes are thrown against the clutch bell, and that causes the truck to move. If the idle is set too high, the clutch will never disengage from the clutch bell and the truck will keep moving. Lower the idle to reduce the engine rpm, but don't lower it too much; you want the engine to continue to run at idle. The RC10GT's clutch shoes are always engaged.



To keep the screws from backing out of the suspension blocks, use gasket sealant on the threads.

A top view of the GT shows how tight the gap is between the spur gear and the suspension block.

REAL PERFORMANCE PRODUCTS!**Traxxas Lightened Spur And Double-Disc™ Slipper Kits**

RRP's NEW line of Lightened Spur and Double-Disc Slipper Kits for Traxxas Nitro and T/E-Maxx trucks are designed to improve performance and increase reliability. This combo incorporates a machined steel or Super-Tough plastic spur, a Vented Aluminum Clutch-Plate/Gear Adaptor (small or large), 2 Slipper Pads and 2 Plates to deliver the adjustability you need and the increased performance that you demand. **Complete Slipper Kits** are available in the following sizes: RRP 8166 Slipper Kit with 66T Super-Tough plastic spur (Stock Size) for E-Maxx RRP 8172 Slipper Kit with 72T Super-Tough plastic spur for Traxxas Nitro RRP 8465 Slipper Kit with 65T Steel Spur for Traxxas Nitro RRP 8472 Slipper Kit with 72T Steel Spur (Stock Size) for T-Maxx. Spurs, Clutch-Plate/Gear Adaptor and Slipper Pads also sold separately.

T-Maxx Forward ONLY Hardened Gear Kit

This kit contains a 26T hardened aluminum output gear, a forward drive hub adaptor and spacer. RRP 8585

Nitro and T/E-Maxx Accessory Spurs

A wide range of spurs fit our Double-Disc Slipper Kits. Choose from machined Super-Tough plastic spurs in 66, 68, 70, 72 and 76T sizes, RRP 82XX, or CNC machined steel spurs available in 65, 72 and 76T sizes, RRP 83XX. Small Clutch Plate/Gear Adaptor fits 65 thru 70T spurs. Large Clutch Plate/Gear Adaptor fits 72 thru 76T spurs.

Traxxas Nitro Hardened Steel Clutchbells

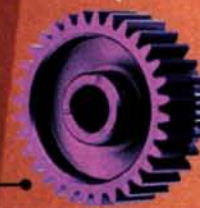
CNC Machined from solid steel these bells are built to last. They take the 5x11 bearing (NOT included). Available in 19T, RRP 8119, 20T RRP 8120, 21T RRP 8121 and 23T RRP 8123.

T-Maxx Hardened Forward Primary Gear

Machined from solid aluminum and hard coated. A direct replacement for the stock gear. RRP 8528

48P Absolute Series Pinions

Super hard, lightened and cut with unmatched precision. Great with any spur, but with an Absolute spur, even off noise is gone! Available in 48P in 16T thru 28T sizes. RRP 1416 - RRP 1428.

48P / 64P SuperLite Aluminum Pinions

They're lightened, hard coated and precision cut. Available in 48P in 16T thru 28T, and 64P in 24T thru 38T. RRP 30XX (48P) and RRP 31XX (64P). Only \$5.25

48P Hard Nickel Plated Steel Pinions

These precision cut gears have an extremely hard coating that makes them really last. Available in 12T thru 35T. RRP 1012 - RRP 1035

Make No Compromises.

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PESKY BALL JOINTS

Please help! I have a Team Losi Triple-XNT that keeps breaking ball studs. I've had to replace the rear shock tower twice because of this problem. I've also broken a ball stud on a steering block and on one a hub carrier. I'll admit that my track is brutal, but none of my truck-racing buddies have this problem. I've also bent a couple of tie rods, but I could bend them back into shape instead of replacing them. [email]

Travis Portala



Titanium turnbuckles are available in lengths to fit various vehicles. If you can't find a set to fit yours, you can buy them individually. Measure your vehicle's turnbuckles and replace them with titanium units of the same size.



Here, titanium turnbuckles are mounted on an XNT.

Travis, I have one word for you: titanium. Titanium is stronger than steel and considerably lighter. If you race your truck on a brutal track that's riddled with ruts, bumps and jumps, you might want to replace your truck's ball studs and tie rods with titanium units. Team Losi and Robinson Racing have titanium ball studs for your truck, and Lunsford makes the strongest titanium tie rods in the business. Installing titanium should solve your problems. Trust me.

NEW T-Maxx Steel Diff Gear Set



T-Maxx / E-Maxx differential gear set, includes: 1 beveled pinion gear, 1 beveled spur gear, 4 re-usable stainless steel phillips head screws, 1 tube Associated Black Grease, and a shim kit for spider gears with 10 .003" shims. 2 sets needed per truck.

RRP 8590

NEW T-Maxx Aluminum High Performance Brake Kit



New, lightweight aluminum high performance brake kit, includes bigger, more aggressive brake pads and steel backing plates. One piece vented rotor minimizes side-to-side wobble. RRP 8560

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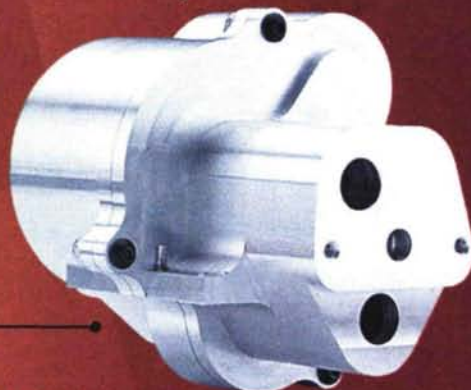
T-Maxx Vented Flywheels



Aluminum vented flywheels move air over clutch bell, improving performance and cooling. RRP 8551 Blue, RRP 8550 Natural Silver



Forward ONLY Racing Gearbox For T-Maxx



Precision CNC machined from aircraft grade billet aluminum this Forward ONLY Racing Gearbox will give your T-Maxx a serious competitive edge. RRP 8595

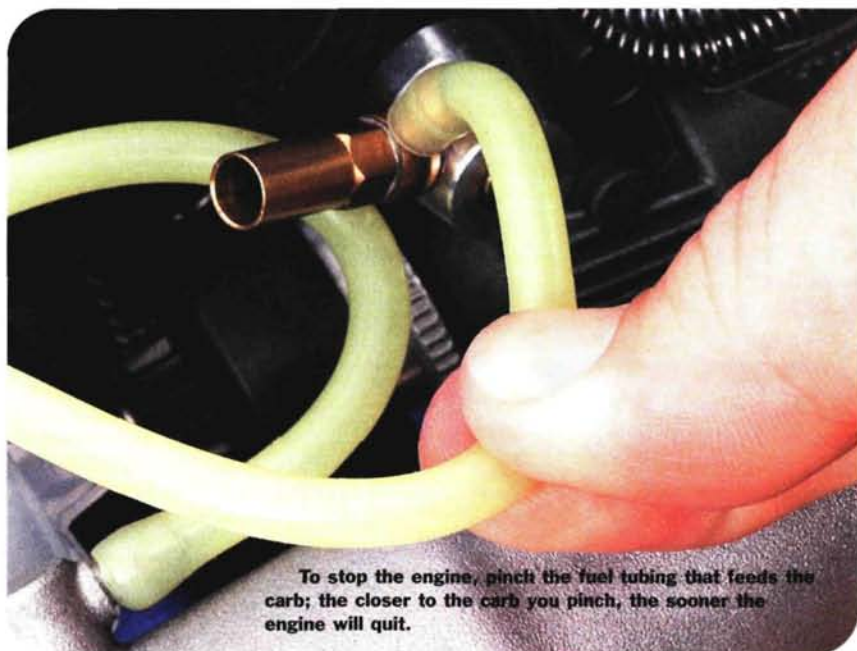
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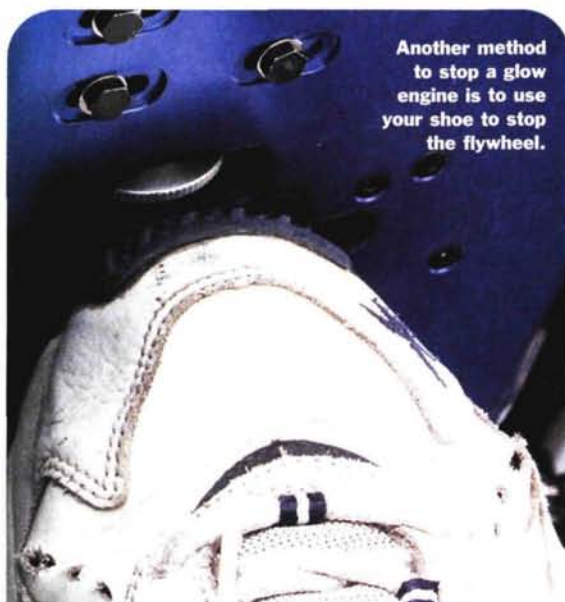
CAN'T STOP THIS

What's the best way to turn off an RC engine? I've heard that putting your thumb over the tuned-pipe stinger or carb is the best way to stop an engine. Is that true? What about pinching the fuel line? Will an abrupt cutoff of the engine's fuel supply harm the engine? [email]

Justin Palmero



To stop the engine, pinch the fuel tubing that feeds the carb; the closer to the carb you pinch, the sooner the engine will quit.



Another method to stop a glow engine is to use your shoe to stop the flywheel.

You forgot one method, Justin: you can also shut the engine down by stopping the flywheel with your shoe. To shut down my engines, I usually pinch the fuel line, but that doesn't mean it's the best way; all of these methods will do the trick. I've heard compelling arguments on the pros and cons of each technique. Just stick to the method you're most comfortable with, and your engine won't complain.

RS4 Nitro Aluminum Brake Kit



Lightweight aluminum, variable braking system. RRP 1575

RS4 Nitro Vented Flywheel



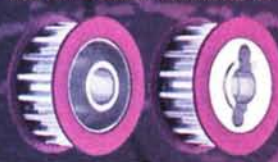
Aluminum vented flywheels move air over clutch bell, improving performance and cooling.
RRP 1570
RRP 1571 Pull Start

Stealth Sedan Spurs



These precision machined spur gears are super quiet. They're available in 48P in 60T thru 96T sizes, and fit any HPI electric car or truck.
RRP 1860 thru
RRP 1896.

RS4 Nitro Small Aluminum Drive Pulleys



Hardened drive pulleys, sold in pairs.
RRP 1538

RS4 Top Shaft Pulley



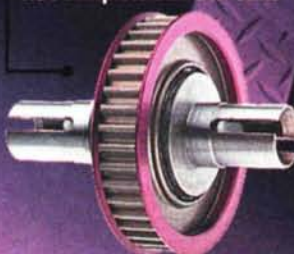
One piece pulley and shaft are precision cut and hard anodized. Purple anodized side flanges are pressed on. RRP 1527

RS4 / Pro / Pro2 / Nitro Aluminum Outdrives



40% lighter than stock ball diff outdrives. RRP 1585

RS4 Complete Ball Diff Units



Hardened steel outdrives, ground and polished thrust washers, 2 5x8mm ball bearings, and aluminum pulley.
RRP 1590 Electric
RRP 1595 Nitro

RS4 Diff Pulleys



Precision machined, hard anodized aluminum diff pulleys.
RRP 1539 nitro sedans
RRP 1528 electric sedans

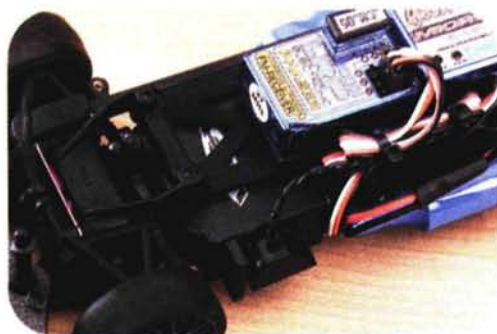
RS4 Nitro Lightened Gear Adapter



This lightened gear adapter includes a machined nylon spur that's tougher than the stock gear and will last longer.
RRP 1535

www.robinsonracing.com

RS4 Nitro 32 Pitch Conversion Kit is available. RRP 1536



Above: here's a Micro RS4 with a standard servo installed. The only modification needed to the servo is to remove the right-side mounting tab so it will clear the drive belt.

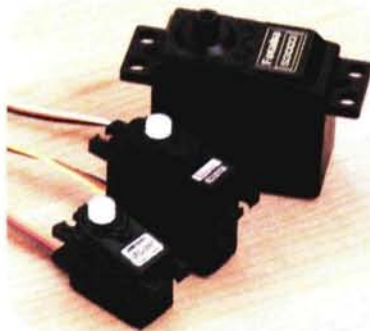
Most micros servos are designed for light-duty applications, such as moving the flaps on a light-weight electric glider. The

Micro RS4 requires a heavier-duty servo to turn its wheels at high speeds. The servo must also survive run-ins with a PVC pipe or wooden board, both of which are commonly used to make track lanes. Invest in a slightly larger 1/2-scale servo, such as an Airtronics 94145 or a Hitec HS-225BB; they are still much smaller than standard servos and are light and compact. That should solve the problem, and you'll probably notice improved lap times, too. ■

MICRO RS4 EATS MICROSERVOS

I have an HPI Micro RS4 that breaks steering servos. I use a Hitec HS-81, and I've had to replace the internal gears three times. I decided to try the HS-81MG, which has the same specs but is equipped with metal gears. That servo lasted a bit longer, but it failed, too. Which microservo do you recommend? I'm tired of buying servos that don't last.

John Patrick, Canoga Park, CA



Pictured top to bottom: standard servo, miniservo and microservo. Mini and standard-size servos fit and perform reliably in the Micro RS4, but micros servos tend to fall short. HPI designed the Micro RS4 to take a standard-size servo, and that is what most RC'ers have on hand.

TOOLBOX

NIFTECH CIRCLE CUTTER

Cutting out wheel wells and cooling openings on Lexan bodies can be very difficult to do well, especially the first time you try it. Niftech's circle cutter makes the job much easier and can give you professional results. With a circle diameter range of 1/2 to 5 3/4 inches, the circle cutter's sharp blade cuts through Lexan. The calibrated handle allows you to accurately adjust the circle's diameter, and a locking mechanism will hold the setting. To cut a perfect circle, simply place the scribe in the center of the wheel well or cooling opening and rotate the tool like a compass.

Item no. 3150, \$5.95

NIFTECH (440) 257-4281; niftech.com.

NEED HELP?

Send your Troubleshooting questions and comments to George M. Gonzalez georgeg@airage.com.

RC10-GT Steel Combo



Precision machined from solid steel, then hardened, this 65T spur and 15T bell combo will last and last. The extra-hardened clutch bell fits ALL Associated and MIP shoes. RRP 2365

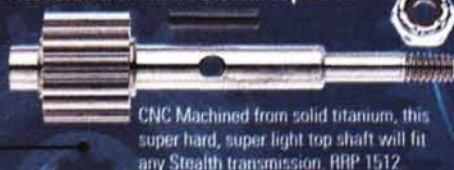
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Hardened Steel Idler Gear



Cut from solid steel stock, this gear is lightened and hardened for super quiet precision and extra long life. Jammin' tranny grease is included. RRP 2213 RC10-GT, RRP 7505 Ultima GP-R

Associated Titanium Stealth Top Shaft



CNC Machined from solid titanium, this super hard, super light top shaft will fit any Stealth transmission. RRP 1512

Hardened Diff Gear



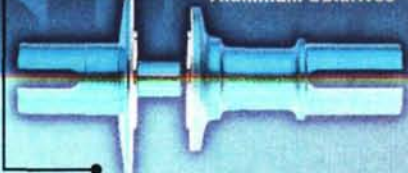
Hard anodized, precision CNC machined aluminum diff gear. RRP 1513 RC10-GT RRP 7500 Ultima GP/EP-R

Blue Lightened Slipper Kit



The rear plate is hard anodized and the front plate is color coated. The front plate holds the feet forcing it to slip on the rear plate. When pad wears, just flip it over for a new surface. RRP 1515 Associated, RRP 7515 Kyosho Ultima

Aluminum Outdrives



40% lighter than stock bell diff outdrives. RRP 1476 TC3, RRP 1502 B3/T3

TC3 Ultra 48 Pitch Spur



Precision machined from heat-resistant plastic, these spur mesh flawlessly with our plastic gears. Available in sizes 701 thru 80T, RRP 1670 RRP 1680.

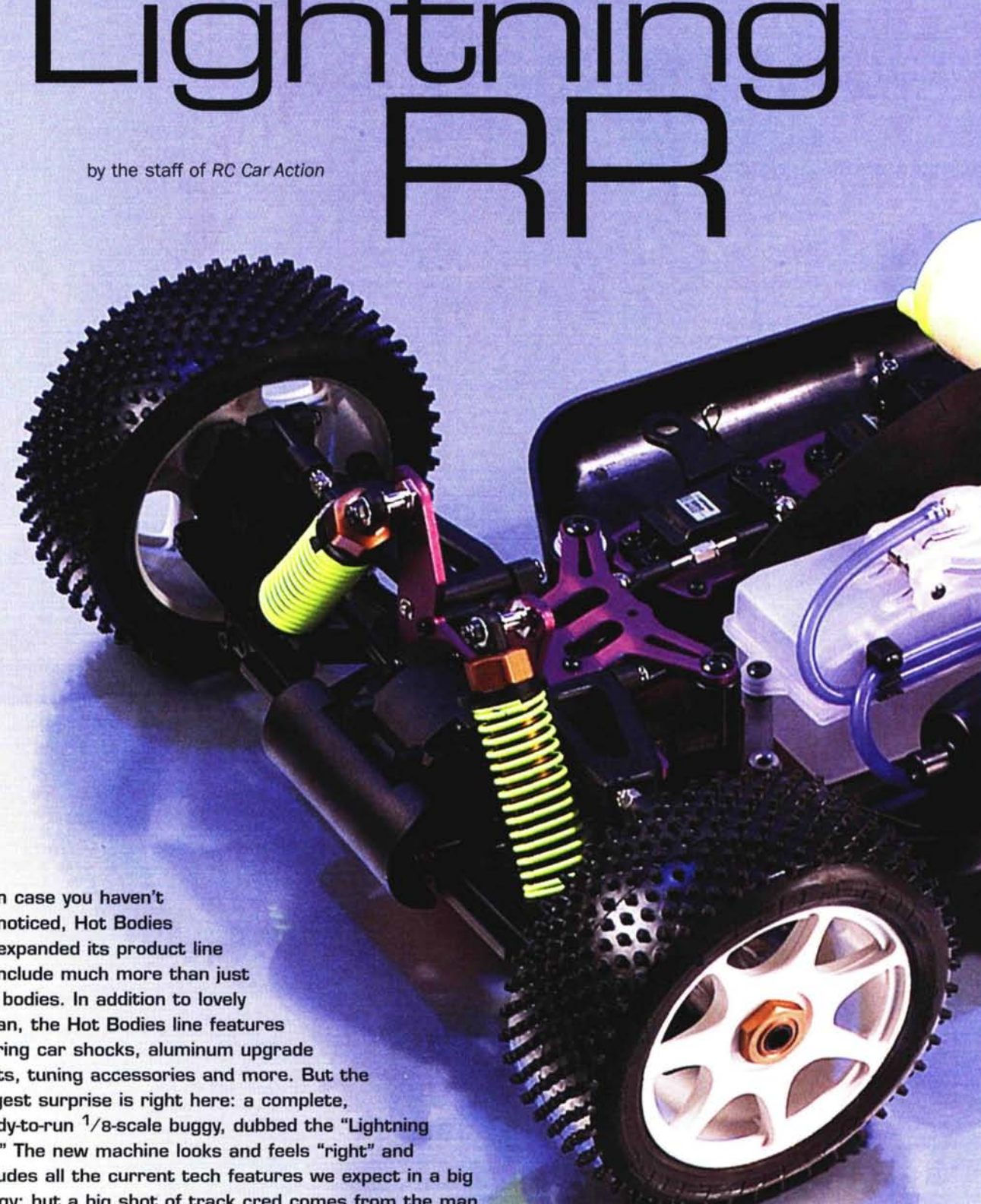
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FIRST LOOK >>>

Hot Bodies Lightning RR

by the staff of *RC Car Action*



In case you haven't noticed, Hot Bodies expanded its product line to include much more than just hot bodies. In addition to lovely Lexan, the Hot Bodies line features touring car shocks, aluminum upgrade parts, tuning accessories and more. But the biggest surprise is right here: a complete, ready-to-run $1/8$ -scale buggy, dubbed the "Lightning RR." The new machine looks and feels "right" and includes all the current tech features we expect in a big buggy; but a big shot of track cred comes from the man who will wheel the buggy in international competition: none other than Atsushi Hara, the reigning IFMAR on-road world champion. Let's take a look at Atsushi's new ride.

LIGHTNING IN A BOX

Hot Bodies plans to sell the Lightning RR ready to run, complete with a painted body, factory-glued tires and full ball bearings. The Lightning pictured here is one of Hot Bodies' first test samples and doesn't yet have the full RTR spec; the body is hand-painted, and Pro-Line tires are fitted. Also, the radio system hasn't yet been determined, but Hot Bodies plans to include one that's comparable to the Airtronics Blazer we used to complete the Lightning. Additional support gear will include a four-way wrench, glow-starter, fuel bottle and AA batteries to power the radio system.

SPECIFICATIONS

MANUFACTURER

Hot Bodies

MODEL

Lightning RR

DIMENSIONS

Wheelbase 12.8 in. (325mm)

Width 12 in. (305mm)

WEIGHT

Total 126.4 oz. (3,583g)

CHASSIS

3mm aluminum plate, "bronze" anodized

DRIVE TRAIN

3-differential, shaft

AXLES

CV-type universal joint (front); dogbone (rear)

DIFFERENTIALS

Bevel gear with 4 spider gears, grease-filled sealed plastic housing

BEARINGS

Metal-shielded ball bearings

SUSPENSION

Lower H-arm with wishbone upper arm (front); lower H-arm with turnbuckle camber link (rear)

SHOCKS

Aluminum, "bronze" anodized, with clip-on preload spacers and rubber shaft boots

WHEELS

One-piece 6-spoke

TIRES

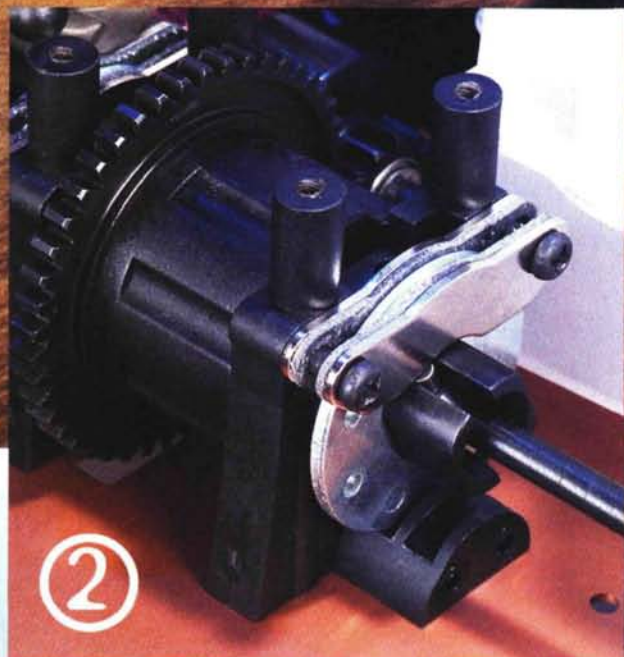
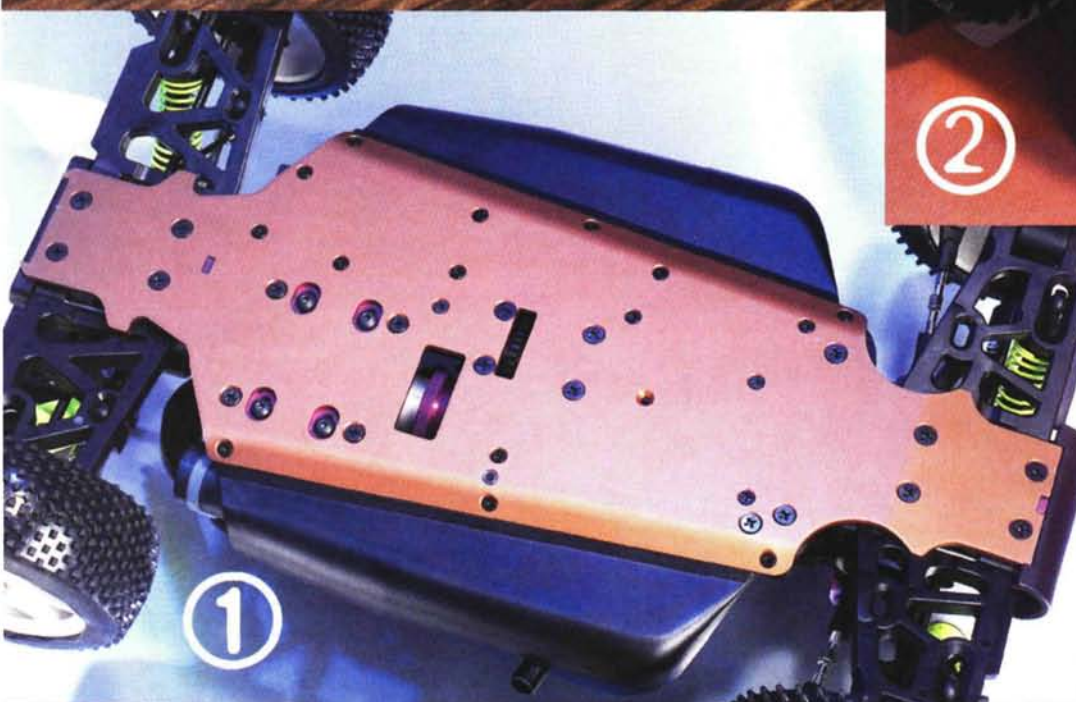
Not yet specified, Pro-Line shown

Atsushi Hara's New Wheels





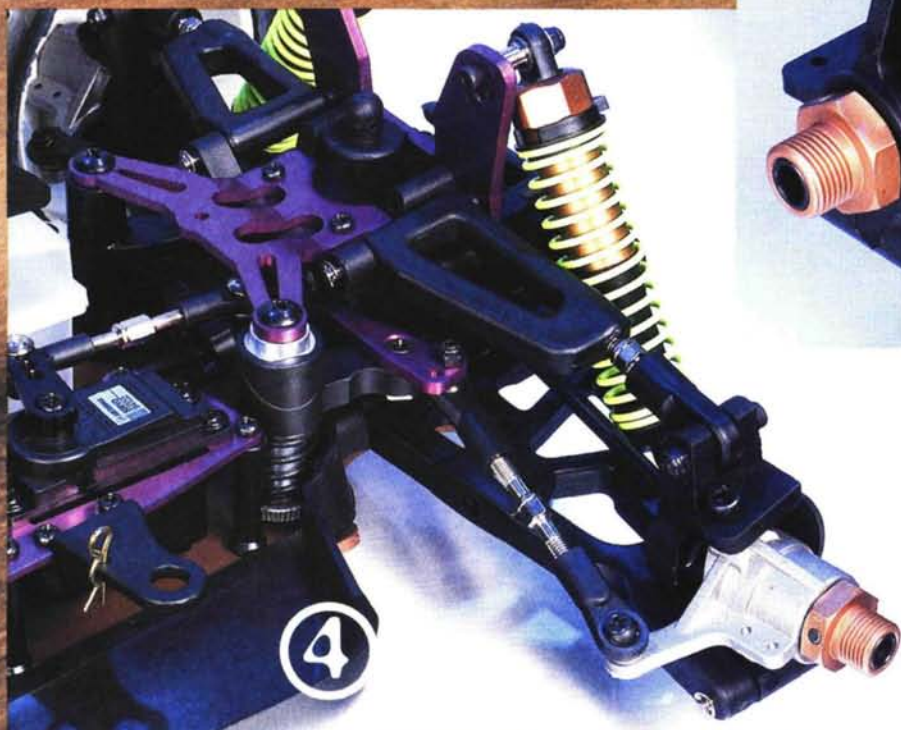
1. It's not surprising that all the underside screws are countersunk. Short pads are provided for arm-mounted droop screws, and radiused sides bolster strength. The chassis looks flat in this shot, but it has a few degrees of kick-up.



2. The RR's differentials have plastic housings to trim cost, but there's good stuff inside; four spider gears increase the diffs' durability, and although the diffs are grease-filled at the factory, O-ring seals allow you to fill them with silicone fluid to adjust their action. Also note the steel spur gear and the padded steel calipers and brake rotors with molded guides. The RR uses single front and rear rotors, but there's room for a quad setup.

3. A 2mm rear swaybar is standard on the RR, as are dogbone axles; CV-style universals are up front. Spacers on the hub carriers' hinge pins allow wheelbase adjustments, and a conventional turnbuckle link handles camber changes. Rear toe can also be adjusted via an included assortment of toe blocks. Rubber boots protect the shock shafts. Only its corner is visible in this shot, but the Lightning includes a spacious, enclosed receiver box with room for a 3x2 receiver pack.

4. The Lightning has a conventional C-carrier front suspension with lower H-arms and turnbuckle-equipped upper wishbones. This photo also shows the bellcrank post brace, adjustable servo-saver (if you can reach it) and 2mm drag plate. We'd like to see a brace between the front suspension and chassis or center diff, but that can be added later. The hex hubs and shock bodies are anodized in an attractive bronze-like hue that's a nice departure from the usual blues and purples.



6. Screw-on fuel-line guides are a nice feature for neat-freaks, and the shark-fin splashguard should prevent all but the sloppiest pit monkeys from pouring fuel into the brakes or dousing the radio tray. The tank uses the preferred cap-mounted pressure fitting, and a spillway carries off any fuel that doesn't make it into the tank during quick fill-ups.



5. Force supplies the Lightning's .21 pull-start powerplant and its industrial-strength heat-sink head. The 2-needle slide carb's metal banjo fitting appears well sealed, and a round-port manifold and tuned pipe are also Lightning standards. The rod brace that reaches from the rear suspension assembly to the chassis is just visible.



WILL LIGHTNING STRIKE?

We barely had time to break in the Lightning's Force engine and snap a few shots before shipping this issue off to the printer, so we don't have a full test report for you yet; that will happen soon (we hope with an Atsushi Hara setup for you as well). Though we can't comment on the Lightning's abilities in full-race mode, we can say it was a lot of fun to blast around with during the photo shoot; and as an instant-excitement BTR for high-performance play, it's more than ready to go. The performance potential is there, and after a little more wheel time, we'll let you know what it can do.

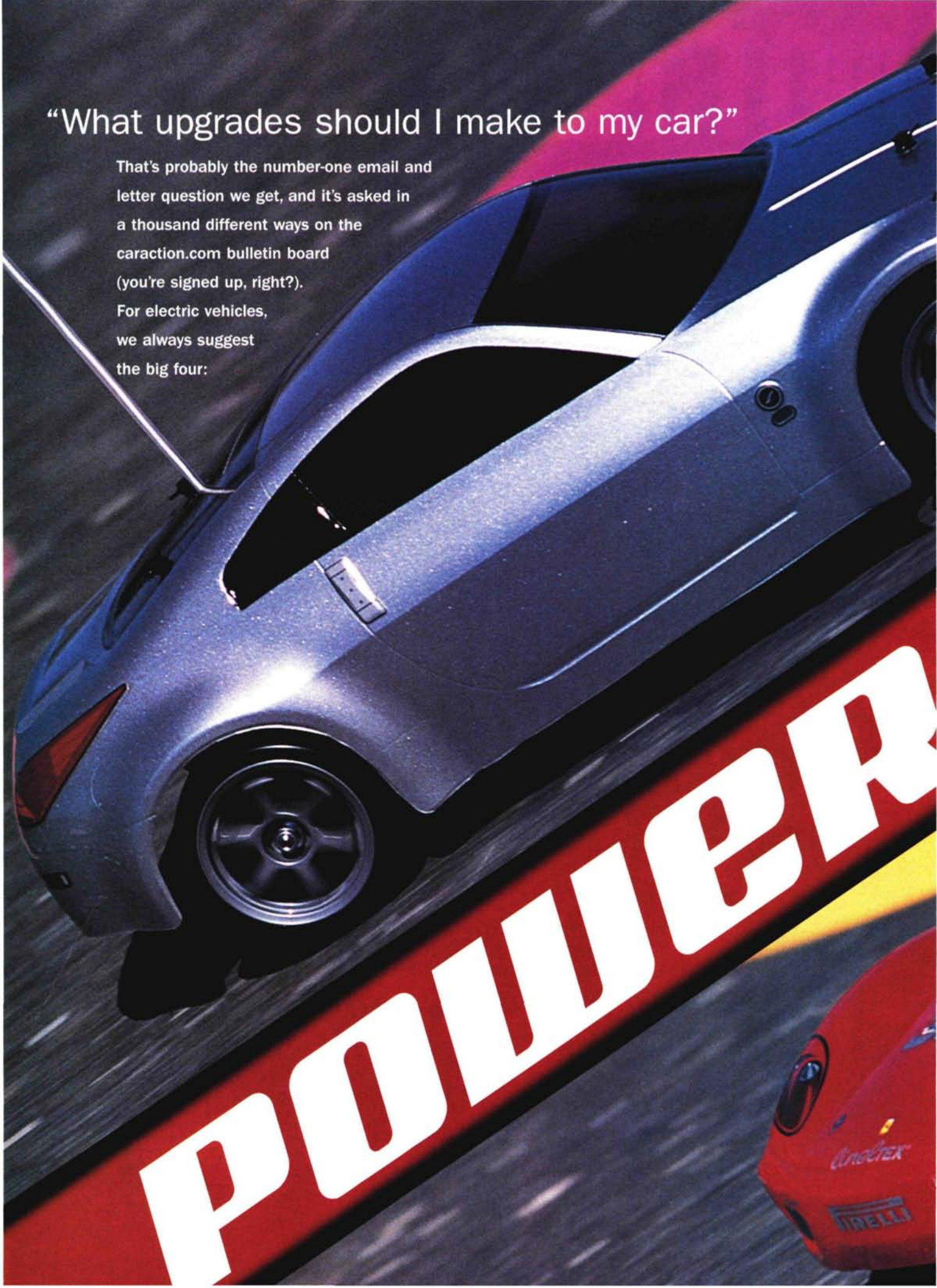
SOURCE GUIDE
HOT BODIES (562) 468-1121; hotbodiesonline.com.

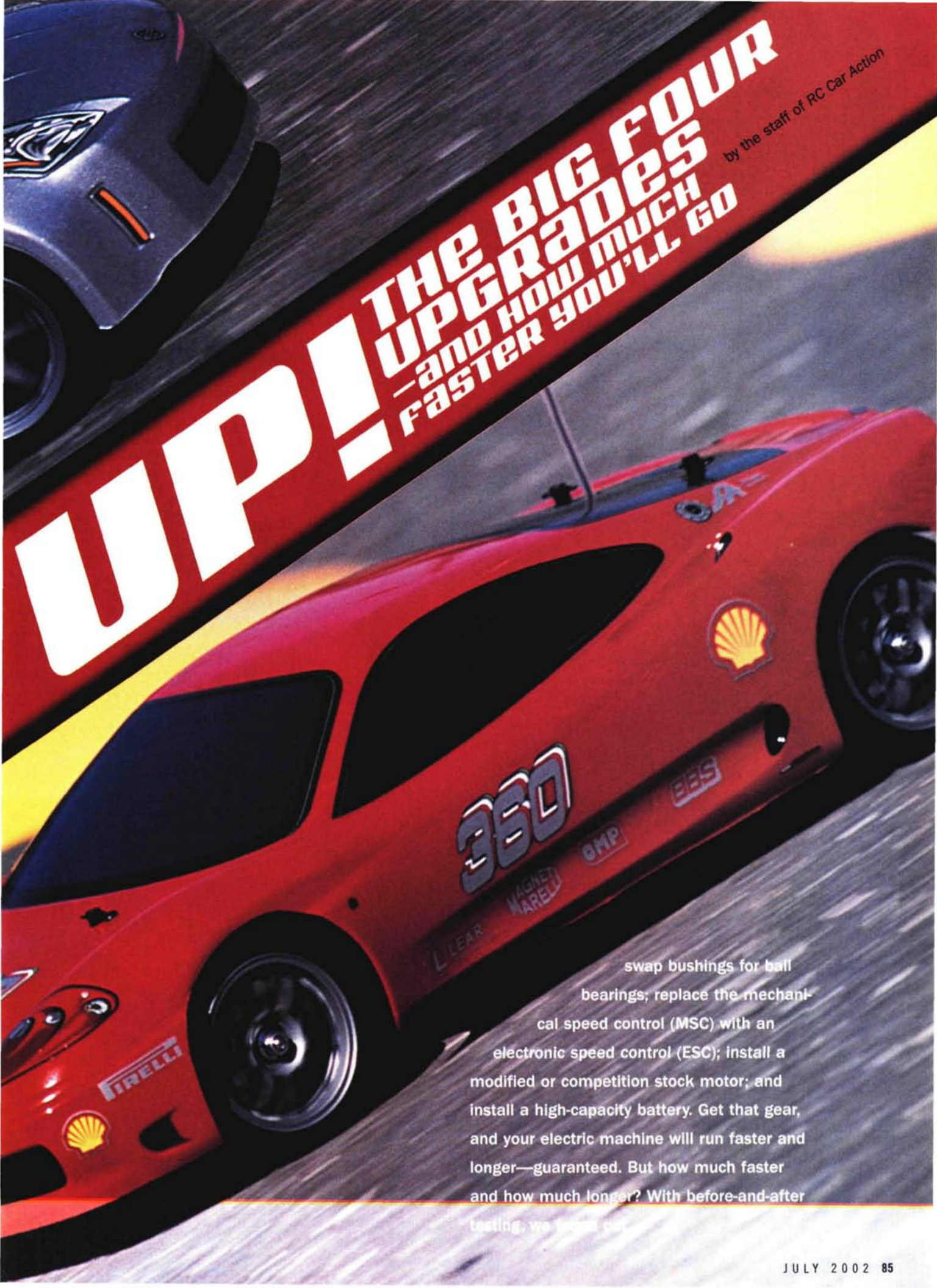
"What upgrades should I make to my car?"

That's probably the number-one email and letter question we get, and it's asked in a thousand different ways on the caraction.com bulletin board (you're signed up, right?).

For electric vehicles, we always suggest the big four:

POWER

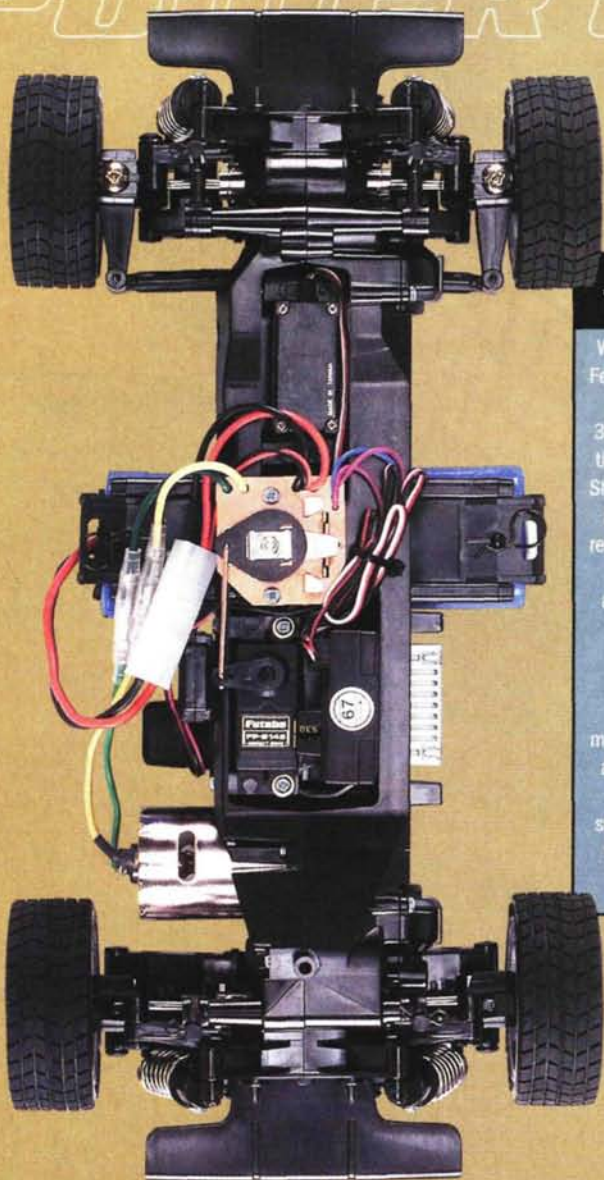




UP! THE BIG FOUR UPGRADES —and how much FASTER you'll go

by the staff of RC Car Action

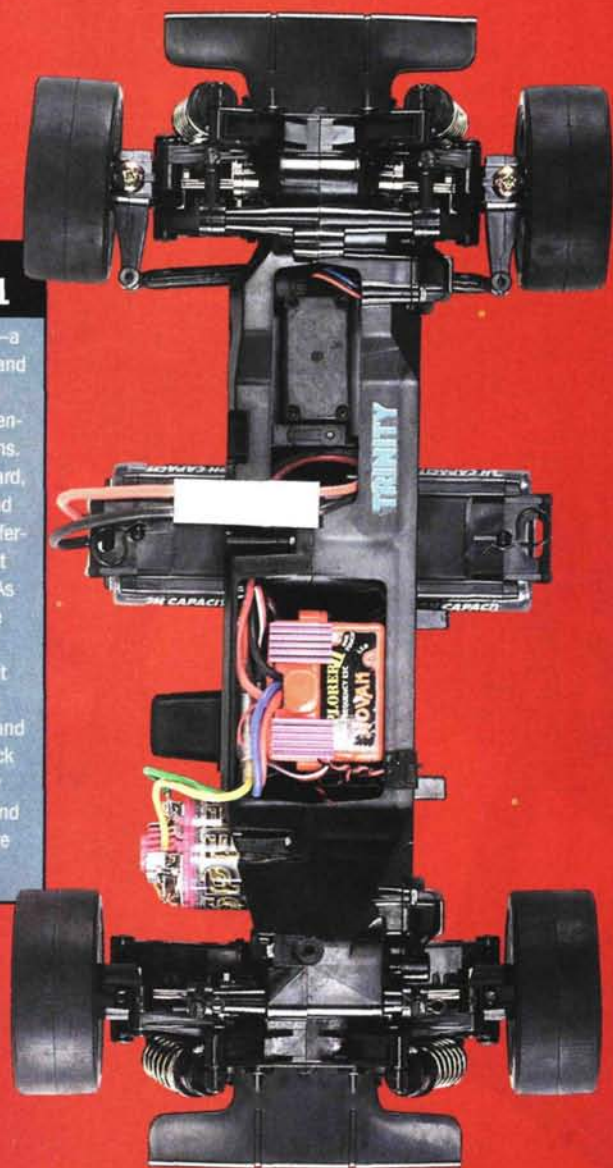
swap bushings for ball bearings; replace the mechanical speed control (MSC) with an electronic speed control (ESC); install a modified or competition stock motor; and install a high-capacity battery. Get that gear, and your electric machine will run faster and longer—guaranteed. But how much faster and how much longer? With before-and-after testing, we found out.



BEFORE

THE TEST BED TAMIYA'S TL01

We have the latest flavors—a Ferrari Modena Challenge and the just-hatched Nissan 350Z, but all TL01s are identical under their Lexan skins. Shaft-driven 4WD is standard, and the enclosed front and rear gearboxes and gear differentials make the cars just about maintenance-free. As Tamiya's most affordable sedan chassis, the TL01 includes the usual budget stuff: plastic bushings, a mechanical speed control and a sealed-endbell 540 stock motor. That gear is easily swapped for faster stuff, and the performance gains are impressive; you'll see.



AFTER

1 MACHINE-WOUND MODIFIED MOTOR

PAY \$15 to \$40

GET more speed—pure and simple: a hotter motor will give your car an instant shot of extra velocity. And extra longevity; unlike the sealed-endbell stock motors included with many kits, modified motors can be completely disassembled for cleaning and repairing, and the brushes are easily replaced. But of course, you want to hear about speed, so let's talk speed. Motors are described as having a certain "wind," or "turn"—"15 double," for example. The numbers refer to the wire that is wound (or "turned") around the armature (the part inside the motor that actually spins). In this example, two strands of wire are wrapped around the armature 15 times. The lower the number of turns, the more power and rpm a motor churns out. But as power and rpm go up, so does amp draw—the amount of energy the motor pulls through the speed control from the battery. MSCs can't handle much amp draw without burning up their low-speed functions, and inexpensive ESCs aren't recommended for the lowest winds. (More on that later.) For the best balance of speed and power in touring cars and off-road vehicles, we suggest you stick with the 14- to 19-turn range or try a 27-turn rebuildable stock motor.



2 ELECTRONIC SPEED CONTROL (ESC)

PAY \$30 to \$130.

GET more control and greater efficiency. A mechanical speed control varies the speed of a motor by shunting battery power off to resistors where it is converted to heat. The battery always pumps full power; the speed control is simply a multi-position switch that selects one of three "speeds." As you might imagine, burning off battery power as heat isn't great for run time, and being limited to three "speeds" makes it impossible to apply the throttle smoothly. In addition, MSCs require frequent cleaning if they're to operate with any reliability, require a servo to actuate them and have finicky linkages.

An ESC eliminates those problems with solid-state circuitry. Instead of resistors, an ESC controls speed by switching a motor on and off. It happens much faster than you can detect; early ESCs switched at 60Hz, or 60 times per second; 1000Hz is about the minimum for today's ESCs. Throttle control is precise—from a crawl to wide open—and battery life is extended. Plus, your car will look much neater and will be lighter. An ESC is the only way to go!



BEFORE & AFTER

Whether you have an MSC or an ESC, full throttle is full throttle; there isn't a speed advantage. The benefits of an ESC are greater control and longer run times. We can't quantify control (other than to say it's a 100-percent improvement), but we can measure run time. We ran our MSC-equipped TL01 until the battery dumped, then we recharged the pack (after letting it "rest" overnight) and repeated the test after installing a Novak Explorer II ESC in the otherwise untouched car.

Run time with MSC: 8.5 minutes

Run time with ESC: 10 minutes

Installed: Novak Explorer II

Novak's Explorer II is the company's most affordable ESC, but it's still packed with features: push-button setup, reverse-voltage and thermal-overload protection and anti-glitch circuitry are all standard. Performance is excellent, too, thanks to super-fast 7800Hz switching, and the Explorer II can handle mod motors down to 15 turns.

Novak Explorer II—item no. 1910.

More ESCs: check out our "Reversing ESC Guide" (April 2001 issue) and "Low-Buck ESC Guide" (April 2002) for more specs and ESCs, including these:

- LRP F1 Reverse—item no. LRP8319; \$60.
- DuraTrax Streak—1039; \$55.
- XTM Sportsman—145710; \$45.



BEFORE & AFTER

We installed a Trinity Speed Gems 2 Amethyst, which is a 17-double. As you can see, more motor gave the TL01 a major boost!

MOTOR	DISTANCE TRAVELED IN				
	1 SECOND	2 SECONDS	3 SECONDS	4 SECONDS	TOP SPEED
Stock 540 motor	7.86	27.44	49.80	72.82	15.8
Trinity Speed Gems 2 Amethyst	9.39	33.13	62.07	92.75	21.47

Installed: Trinity Speed Gems 2 Amethyst

Trinity's Speed Gems 2 Amethyst features adjustable timing and ball bearings, and it includes solder-on capacitors. Trinity's newest Speed Gems line will be available by the time you read this and will include factory-installed surface-mounted capacitors and the new P-94 type Big Brush system.

Trinity Speed Gems 2 Amethyst—item no. 9215; \$30.

More motors: check out the "Machine Wound Modified Motor Guide" (August 2000 issue) for specs and dyno results on over 50 motors, including these:

- Reedy Pulse R—available in 9 to 14 turns; \$35.
- Team Orion Pilot—available in 11 to 19 turns; \$20.
- Peak Stratos—available in 11 to 19 turns; \$30.



3 BALL BEARINGS

PAY \$15 to \$40

GET reduced friction for longer run times and higher top speeds. Batman has the Joker, Howard Stern has Kathie Lee Gifford, Scott Stapp has Fred Durst, and if you're

speed, your enemy is friction. Ball bearings

are speed's secret weapon; installing a set is like finding free power. More of the motor's power goes into spinning the wheels instead of overcoming the friction of metal or plastic bushings. When shopping for bearings, keep in mind that bearings are not all alike. Metal-shielded bearings are the least expensive, and they're reasonably well-protected against dirt, but they still require regular cleaning to give their best performance. Rubber-sealed bearings are maintenance-free, but they spin with slightly more drag, especially when new. Teflon- or fiber-shielded bearings split the difference between free spinning action and contamination prevention. Whichever you choose, you'll be stepping way up from bushings.



BEFORE & AFTER

We installed a set of Trinity's new ceramic bearings in our test TL01 and measured its top speed. We performed the test with Trinity's Amethyst motor as installed for the mod-motor testing.

Top speed with stock bushings: 21.47

Top speed with Trinity ceramic bearings: 23.2

Installed: Trinity ceramic bearings

Ceramic bearings offer the ultimate in low friction. Don't be misled by the term "ceramic"; the bearings aren't made of the same stuff as your mom's Hummel figurines. The "ceramic" is the ceramic-nitride coating applied to the hard steel balls within the bearing.

Trinity ceramic bearings—various part numbers; price varies with bearing kit.

More bearings: bearings can be purchased individually and in sets tailored to your vehicle and in all sorts of varieties, as mentioned elsewhere. **Acer Racing, DuraTrax, Boca Bearing and your car or truck's manufacturer** are all good sources.

SPEED TRAP!

We use a high-tech radar gun for speed and acceleration testing, but if all you want to know is your car's top speed, you don't need anything more than chalk, a stopwatch, 100 feet of blacktop and a little brain power.

1. Use your chalk to draw two lines 100 feet apart; this is your speed trap. Make sure there's enough room on either end of the trap for the car to accelerate to full speed before entering the trap and to slow down safely after exiting.
2. Using a stopwatch, record how long it takes for your car to cross the trap. Remember: the car must enter and exit the trap at full speed. It helps to have a friend work the stopwatch while you drive.
3. To calculate your car's speed, use this formula:

$$(100 \div \text{time in seconds}) \times 0.68 = \text{mph}$$

For example, if your car made it through the speed trap in 1.8 seconds, you'll get this:

1. $100 \div 1.8 = 55.55$
2. $55.55 \times 0.68 = 37.77$
3. Your car went at 37.77 mph!



click trip
RCCARACTION.COM

CHECK OUT OUR
ONLINE SPEED
CALCULATOR;
YOU CAN USE IT
TO MEASURE TOP SPEED, PREDICT TOP
SPEED, CALCULATE GEAR RATIOS AND MORE!

MORE SPEED SECRETS

HOOK UP. Top speed is most commonly used to determine who is the king of the parking lot or backyard, but when handling matters, getting the right tires for your track or play space is very important. Most entry-level sedans include firm tires that offer long wear but little grip. Likewise, off-road buggies and trucks usually include long-wearing rubber with lugged treads that might not be ideal for your conditions. Check out what the locals run for the hot setup.



LIGHTEN UP. The less weight your car has to carry, the faster it will go. Tamiya offers a light chassis and carbon drive shaft for the TL01, and most other cars and trucks have their own lightweight factory options. The best place to reduce weight is in the transmission and wheels; a gram shaved off a rotating part has a much bigger impact than a gram taken away from a static part.



GEAR UP. There's limited opportunity for gearing experimentation with the TL01, as the kit can only accept 19-, 21-, or 22-tooth pinions, but there is room to gear up, since Tamiya specs the smallest pinion with the kit. In general, entry-level cars tend to be under-gear, and they can easily stand to go up two or three teeth on the pinion. Don't get carried away; if your car goes faster with a 23-tooth pinion than it did with a 20-tooth, there's no guarantee that a 26-tooth gear will make it that much faster. If you over-gear your car, it will actually go more slowly—and will put a lot of strain on the motor and speed control.

4 HIGH-CAPACITY BATTERY

PAY \$25 to \$60

GET longer run time.

Battery capacities and prices vary widely. Basically, it all comes down to the number on the pack; the bigger the number, the longer your truck will run on a charge. The number on the pack refers to its capacity in milliamp hours (mAh). For example, a 3000mAh battery can deliver 3000 milliamps (or 3 amps) for one hour. An RC car draws more amps than that, though; to keep the math simple, let's say a car's motor draws an average of 12 amps during a run. If a 3000mAh pack can deliver 3 amps for an hour, it can provide four times as much amperage (12 amps) for $\frac{1}{4}$ hour (15 minutes). Nickel-metal hydride (NiMH) cells are the capacity kings at 3000mAh, but they're expensive and should be charged with NiMH-specific chargers for best performance. Nickel-cadmium (Ni-Cd) cells are the old standbys, and with a maximum capacity of 2400mAh, they come close to NiMH endurance yet are less expensive. Ni-Cd packs are also available in 2000, 1800, 1700, 1500 and 1400mAh capacities, each at a lower price than the next. So let your wallet be your guide, and keep the math in mind; you might get more run time by buying three less expensive, lower-capacity packs than you would by spending the same sum on two higher-capacity packs. And always remember that your vehicle's speed isn't affected by battery capacity; whether you buy a cheapie 1400 pack or an expensive 3000, you'll get 7.2 volts of power. ■



BEFORE & AFTER

We ran the stock-motor-equipped TL01 until its 1400mAh pack was so drained that driving the car wasn't fun. After letting the motor cool, we went back out with a 2400mAh pack.

Run time with 1400mAh pack: 10 minutes

Run time with 2400mAh pack: 19.5 minutes

Installed: Sanyo RC2400 pack

Sanyo RC2400 cells are available from all the big brands: Trinity, Orion, DuraTrax, SMC and others are easy to find.

Sanyo 2400 6-cell pack—various manufacturers and part numbers; \$40 to \$60.

SOURCE GUIDE

ACER RACING (310) 472-8090; acerracing.com.

BOCA BEARING (800) 332-3256; bocabearings.com.

DURATRAX; distributed by Great Planes (800) 637-7660; duratrax.com.

LRP; distributed by Team Associated (714) 850-9342; teamassociated.com.

NOVAK ELECTRONICS (949) 833-8873; teamnovak.com.

SMC (540) 298-7706; smc-racing.com.

TAMIYA AMERICA (800) 826-4922; tamiyausa.com.

XTM RACING; distributed by Global Hobby (714) 964-0827; globalhobby.com.

FOLLOW THE LEADERS!

When it comes to stock racing, the difference between leading and following is determined by one thing, **POWER**. With this in mind, extensive research and simulations by our engineers in conjunction with hours of on-track testing by our test drivers resulted in the creation of the most powerful Team Orion stock motor ever, the **Core Stock RS**.

The dyno-tuned race version includes a balanced armature, diamond trued commutator, race spec brushes and springs, and a full dyno test with printout. A standard version is available for the do-it-yourself enthusiast.

20020 Core Stock RS

20021 Core Stock RS Dyno-Tuned

The **Core Stock RS** utilizes a dual stack armature with "Power Tunnels" which provides the optimum combination of RPM, torque, and efficiency.



Magnet Comparison

	old (G9)	new (G12)	unit
Br (remnant flux density)	420.0	450.0	mT
HcB (coercive force)	302.4	342.2	KA/m
HcJ (coercive force)	318.3	358.1	KA/m

All new G12 wet magnets are not only stronger than earlier G9 magnets, but are less susceptible to heat, resulting in more power and longer life.

The dyno-tuned race version includes a balanced armature, diamond trued commutator, race spec brushes and springs, and a full dyno test with printout. A standard version is available for the do-it-

WWW.TEAM-ORION.COM

Serpent Impulse Pro

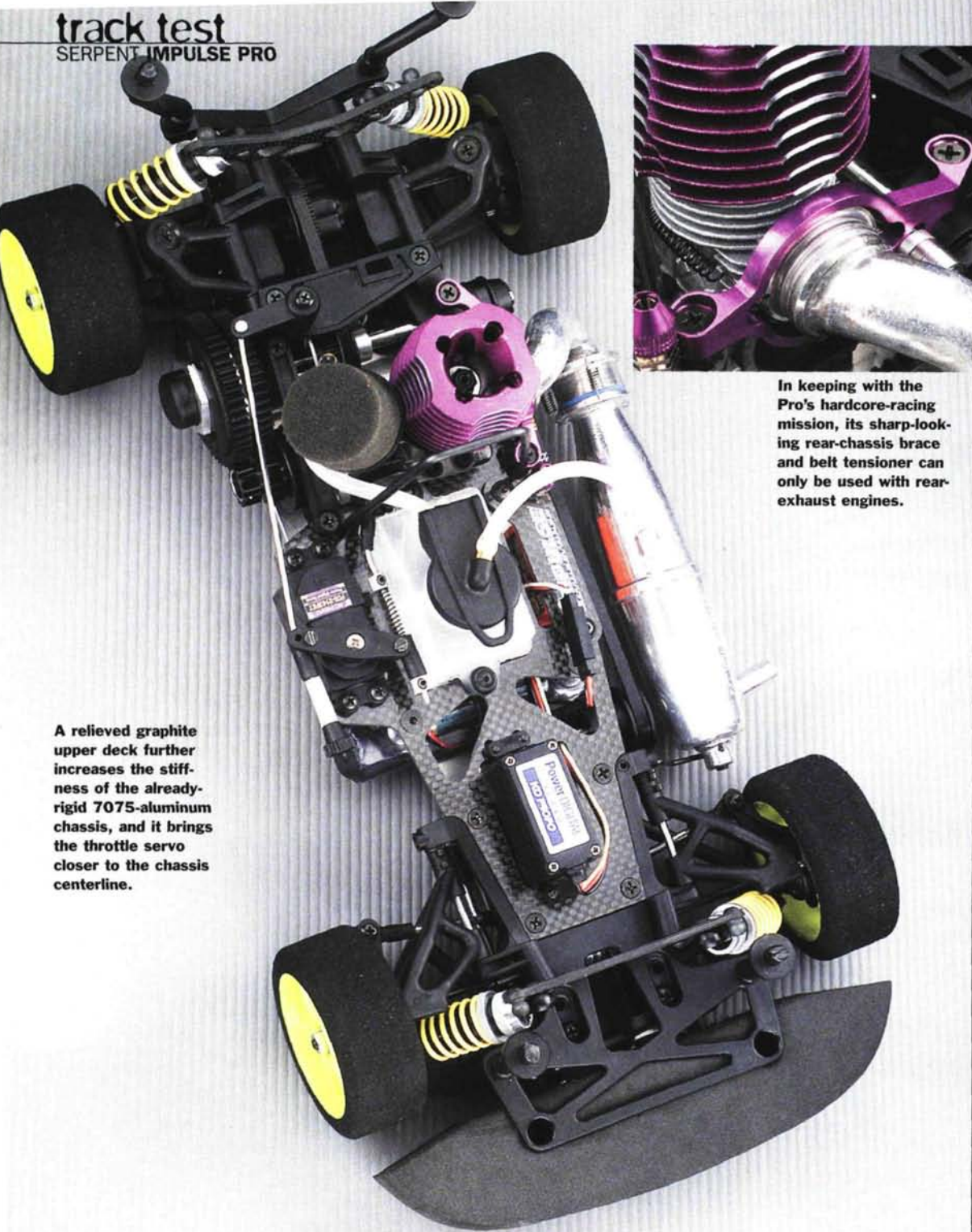
IF THE SERPENT NAME ITSELF doesn't instill enough of an all-race feeling in your gut, the new Serpent Impulse Pro's packaging certainly will. Draped in matte black, with chrome accents and lettering, the Impulse Pro's all-business packaging is a sure reminder that what lies beneath is a Michael Salven-engineered race car for serious racers.

Upgraded but not reinvented, the Impulse Pro picks up where the original Impulse left off, with option parts that include a clutch-type 2-speed transmission, redesigned graphite upper deck and shock towers, foam tires and an upgraded aluminum chassis. It's trick, but is it better?





SUPER
SNAKE!



A relieved graphite upper deck further increases the stiffness of the already-rigid 7075-aluminum chassis, and it brings the throttle servo closer to the chassis centerline.

In keeping with the Pro's hardcore-racing mission, its sharp-looking rear-chassis brace and belt tensioner can only be used with rear-exhaust engines.



The rear suspension includes new 7mm spacers for the upper arms (not shown) to create more camber gain in the turns; aluminum hex hubs are also included. Note the clutch-type 2-speed. It's a little heavy, but exceptionally durable.



DATA CENTER

VEHICLE TYPE 1/10 4WD nitro touring car

BEST BUYER Experienced builder and racers

KIT RATINGS (poor, satisfactory, good, very good, excellent)

Instructions Good

Parts fit/finish Good

Durability Very good

Overall performance Excellent

SPECIFICATIONS

MANUFACTURER Serpent

MODEL Impulse Pro 4WD

DISTRIBUTOR Serpent USA

SCALE 1/10

STREET PRICE \$375

Price varies with dealer

DIMENSIONS

Wheelbase 10.12 in. (257mm)

Width 7.68 in. (195mm)
adjustable in front

WEIGHT

Total, as tested 64.2 oz. (1,820g)

CHASSIS

Type Double-deck

Material Graphite upper/7075-aluminum lower

DRIVE TRAIN

Type 3-belt 4WD

Primary 13T/16T clutch bell;
50T/47T spur (2-speed)

First-gear ratio 3.85:1

Second-gear ratio 2.94:1

Drive-train ratio 2:1

Final drive ratios (1st/2nd)
7.69:1/5.88:1

Drive shafts Dogbones

Differentials (F/R) One-way/gear

Bearing type Metal-shielded

SUSPENSION

Type Double A-arm with pivot ball

Damping Molded-plastic, threaded body, externally adjustable oil-filled shocks

WHEELS

Type One-piece plastic

TIRES

Type Premounted foam

ENGINE AND ACCESSORIES

(Not included)

Engine NovaMEGA SX RE 12 turbo

Carb 2-needle slide

Exhaust NovaMEGA 1-piece

Fuel capacity 75cc

THE PRO'S MILLED AND LIGHTENED ALUMINUM CHASSIS IS MACHINED FROM SOLID T-7075 ALUMINUM AND IS CONSIDERABLY LIGHTER THAN THE ORIGINAL IMPULSE'S ALUMINUM SLAB.

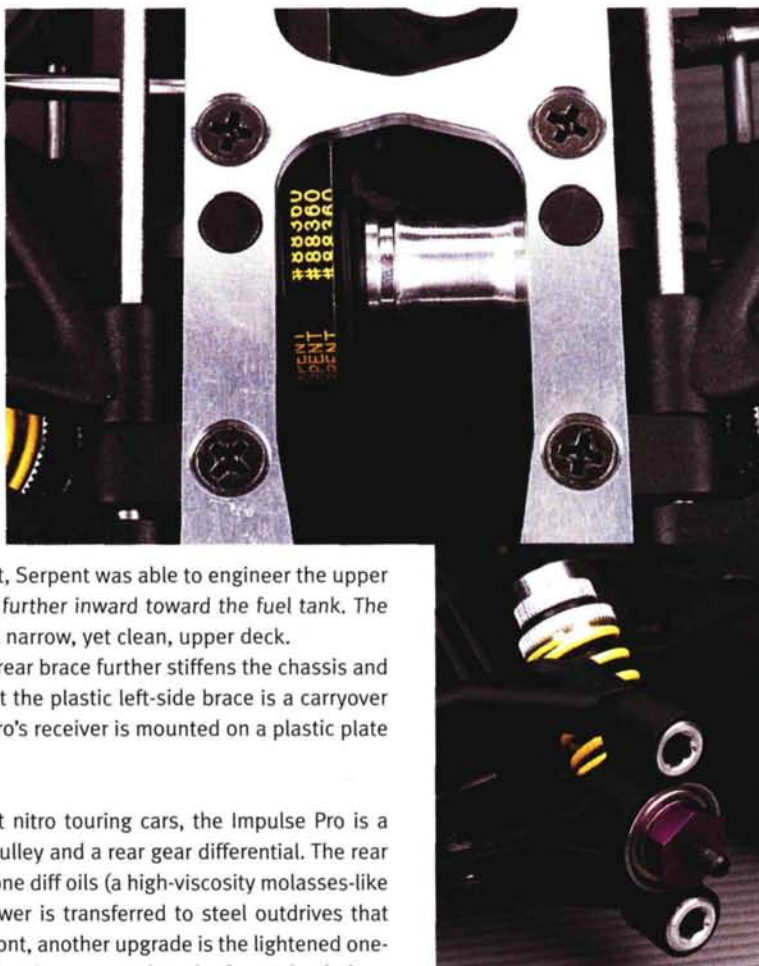
KIT FEATURES

CHASSIS. The Pro's milled aluminum chassis is machined from solid T-7075 aluminum and is considerably lighter than the original Impulse's aluminum slab. Several weight-reducing holes and channels are also nicely machined into the chassis. Another upgrade is the Pro's graphite upper deck, complete with a new low-profile, lightweight receiver battery. A longitudinally mounted NiMH 5-cell 700mAh unassembled AAA battery pack is included in the kit. As a result of the receiver battery's new placement, Serpent was able to engineer the upper deck to bring the throttle servo further inward toward the fuel tank. The end result is a very compact and narrow, yet clean, upper deck.

A right-side purple-anodized rear brace further stiffens the chassis and adds a little color to the mix, but the plastic left-side brace is a carryover from the original Impulse. The Pro's receiver is mounted on a plastic plate on the upper deck.

DRIVE TRAIN. Like most current nitro touring cars, the Impulse Pro is a 3-belt car with a front one-way pulley and a rear gear differential. The rear gear diff may be tuned with silicone diff oils (a high-viscosity molasses-like goop is supplied), and drive power is transferred to steel outdrives that connect to steel dogbones. Up front, another upgrade is the lightened one-way diff with dogbone driveshafts. The one-way lets the front wheels free-wheel when braking and provides more acceleration out of sweeping turns. Purple-anodized aluminum wheel hubs are mounted on all four corners.

SUSPENSION AND STEERING. The suspension on the Impulse has long been a benchmark for touring-car suspensions, so Serpent didn't change a thing on the Pro's suspension. Steel pivot balls are mounted through plastic steering knuckles up front with a plastic upper arm that may be positioned on its hinge pin with plastic clips for adjustable caster. Steel, chrome-plated turnbuckles connect the direct-steering system (complete with servo-saver), and plastic, threaded-body oil-filled shocks with externally adjustable damping take care of bump control. The Pro also includes a rear anti-roll bar and an adjustable blade-style front anti-roll bar for roll resistance.



Left: a one-way front diff can make the car a little tricky to drive at first, but once you get the hang of it, there's no faster way around a prepared racetrack. **Below:** the unique and optional 5-cell receiver pack required for the Pro had to be assembled, but Serpent now offers them preassembled. This pack configuration moves the servo closer to the centerline of the chassis for improved roll characteristics.



Left: the front suspension is relatively unchanged except for the aluminum hex wheel hubs.

ENGINE AND ACCESSORIES. Serpent leaves the choice of engine, pipe and other setup accessories to you. I chose NovaMEGA's newest rear-exhaust, turbo-plug .12 racing engine, the SX12 RE Turbo, for the Pro and a NovaMEGA polished one-piece tuned pipe. A lightweight flywheel with a 3-shoe clutch handles forward thrust.

BODY, WHEELS AND TIRES. The choice of body is left to the racer, so I selected a sharp Pro-Line Protoform Accord body, painted by the airbrush gurus at XXX-Main. Impulse Pro comes packaged with premounted and trued foam tires on yellow, one-piece plastic wheels.

BUILDING & SETUP TIPS

You'll have to assemble your Impulse using two manuals at the same time. Read over the Pro's addendum manual before you begin assembly, and also make a note of the steps you'll skip in the Impulse's regular manual during assembly. Here are a few steps that required more attention than usual.

STEP 8. FRONT ONE-WAY (PRO ADDENDUM). The front belt pulley wouldn't slide over the one-way housing until I slightly trimmed the flashing from the inside of the pulley. Trim a little bit at a time until the pulley locks into place on the housing.

STEP 4.3. BRAKE-CAM INSTALLATION. A large C-clip snaps onto the Pro's aluminum brake cam and then slides into a hole in the chassis. If the C-clip is too large to rotate smoothly inside the chassis hole, sand down the clip's outer edge to reduce its overall diameter. Roll a small piece of sandpaper into a tube, and spin the brake cam inside to sand down the clip.

STEP 5. REAR SUSPENSION. The injection-molded suspension should fall down when lifted on its hinge pins, but I found it to bind slightly. To loosen things up, I spun a 3mm drill bit through the arms' suspension pinholes and the rear plate pinholes.

STEP 11. LINKAGES. To prevent binding, remove excess flashing from the plastic pieces with a hobby knife or flush cutters before assembly.

YOU'LL NEED

- Transmitter and receiver
- Steering and throttle servos
- .12 racing engine and tuned pipe
- Fuel and fuel bottle
- Glow igniter
- Thread-lock
- Lexan touring car body
- Starter box

FACTORY OPTIONS

- Centax clutch—part no.801530
- Solid rear axle—801401
- Vented disc brake—801345
- Aluminum radio-tray support—801106
- Aluminum rear side brace—801134

Futaba 3PDF Transmitter

Futaba radios are famous for their reliability, and my 3PDF continues to support such fame. I especially like how balanced the transmitter feels as well as its myriad of computer features and adjustments.



Additional items used to complete the Serpent Impulse Pro



KO Digital 2143 and 2144 FET servos

Novak XXL receiver

NovaMEGA Turbo engine and 1-piece pipe

Mugen Seiki Team racing fuel

PERFORMANCE

For comparison purposes, I invited my friend David to bring his Mugen MTX-2 Pro-Spec and join me in burning fresh asphalt at a local parking-lot racetrack. After both engines had warmed up, I let the Pro loose and was immediately surprised by its acceleration. Although I would prefer that Serpent had included an adjustable Centax clutch with the Impulse Pro, the 3-shoe clutch system, when coupled with the NovaMEGA engine and pipe combo, makes for jaw-dropping acceleration. From a standing start, the Pro barks off the line and shoots away with ferocious acceleration. Once up to speed, the clutch 2-speed shifts with barely noticeable silky-smooth transitions, and the unit holds its settings well during extended run time.



THE PRO BARKS OFF THE LINE AND SHOOTS AWAY WITH FEROCIOUS ACCELERATION.

The stock suspension setup provides a flat-cornering attitude with slight oversteer. The small parking-lot track, while very smooth, didn't allow the Pro to wind out completely, but it shone as it tackled the right to left switchbacks. After several tanks of nitro, it became apparent that the advantage in the switchback turns was mostly because of the redesigned, narrow upper deck. The Pro's overall chassis balance and front one-way pulley allows it to hold gobs of speed through turns and transitioning maneuvers. Chalk one up for the low-center-of-gravity receiver pack and graphite deck.

The Pro's vented disc brake provides fade-free braking performance. Racers who aren't used to on-road cars with front one-ways, be forewarned: clamping the brakes is a walk on a razor-blade's edge between spinning out and stopping. Unlike touring cars with front and rear diffs, the front one-way allows the front tires to freewheel when braking. Rear-wheel-only brakes are a challenge, but once mastered, provide the best performance to get around a fast track.

THE VERDICT

Serpent's new Impulse Pro impresses me in many ways. The durable clutch 2-speed, front one-way and assorted graphite parts make it very appealing to any serious touring car racer. The Pro kit requires a deft hand during assembly to perform its best on the track, but experienced builders will welcome the assembly challenges.

The Pro's new parts will be offered as buy-as-you-go upgrades from Serpent for current Impulse owners. But if you're an experienced touring-car racer who has never experienced an Impulse, let me suggest you go for the Impulse Pro. It's an exciting performer even in its original spec, but the addition of the Pro-parts makes Serpent's newest nitro tourer a sure-fire Main-maker.

SOURCE GUIDE

FUTABA; distributed exclusively by Hobbico/Great Planes (800) 637-7660; futaba-rc.com.

KO PROPO USA INC. (310) 532-9355; kopropo.com.

MUGEN USA (949) 707-5607; mugenracing.com.

NOVAK ELECTRONICS INC. (949) 833-8873; teamnovak.com.

NOVAROSS DI CESARE ROSSI & C S.N.C., Via Europa 20/A, 25040 Monticelli Brusati, Brescia, Italy.

PRO-LINE (909) 849-9781; pro-lineracing.com.

SERPENT INC. USA (305) 639-9665; serpent.com.

DISLIKES

- Must assemble kit from two instruction manuals.
- Hand-fit required for several components.

THE COMPETITION

VEHICLE	SHOCKS	CHASSIS	AXLES	UPPER DECK	TIRES	STREET PRICE	REVIEWED
Kyosho V-One-R	Threaded-aluminum	3mm T7075	Dogbones	Fiberglass	Foam	\$350*	—
Serpent Impulse Pro	Threaded-plastic	3mm T7075	Dogbones	Graphite	Ellegi foam	\$375*	07/02
Trinity Reflex NT	Threaded-aluminum	4mm T7075	CV axles	Graphite	TRC foam	\$399*	02/02
Yokomo GT-4R	Threaded-aluminum	3mm T7075	Dogbones	Plastic	Foam	\$365*	03/02 (RC Nitro)
Mugen MTX2 Pro Spec	Threaded-aluminum	3mm T7075	Dogbones	Plastic	Foam	\$550*	—

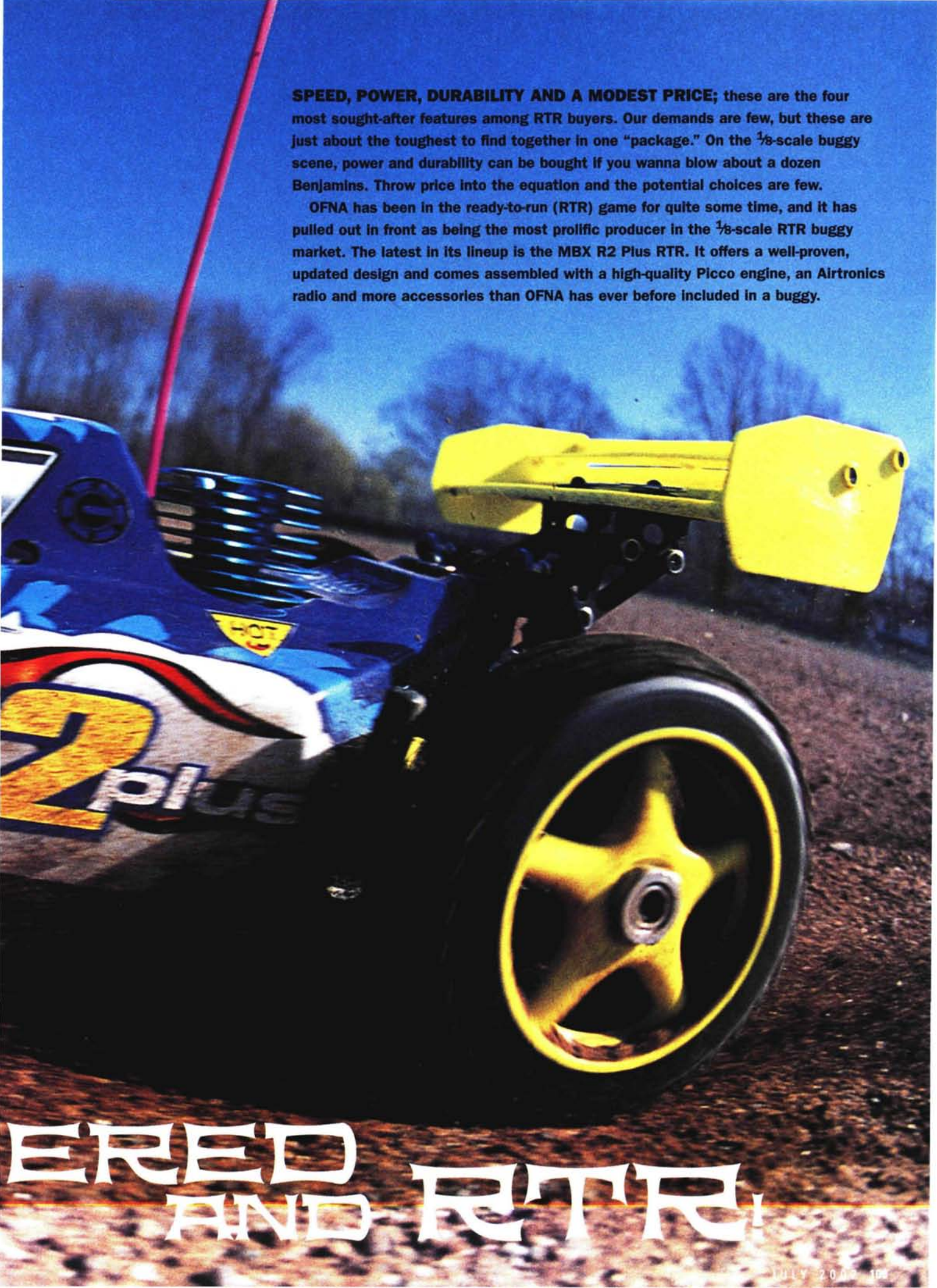
*Price varies with dealer

OFNA MBX R2 Plus



PICCO-POW

PHOTOS BY WALTER SIDAS

A blue and yellow OFNA MBX R2 Plus RTR buggy is shown from a low angle, driving on a dirt track. The buggy has a blue body with yellow and white graphics, including the number '2' and the word 'plus'. It has a yellow engine cover and a yellow wheel. A red antenna is visible on the left side. The background is a blurred landscape with trees and a blue sky.

SPEED, POWER, DURABILITY AND A MODEST PRICE; these are the four most sought-after features among RTR buyers. Our demands are few, but these are just about the toughest to find together in one "package." On the $\frac{1}{8}$ -scale buggy scene, power and durability can be bought if you wanna blow about a dozen Benjamins. Throw price into the equation and the potential choices are few.

OFNA has been in the ready-to-run (RTR) game for quite some time, and it has pulled out in front as being the most prolific producer in the $\frac{1}{8}$ -scale RTR buggy market. The latest in its lineup is the MBX R2 Plus RTR. It offers a well-proven, updated design and comes assembled with a high-quality Picco engine, an Airtronics radio and more accessories than OFNA has ever before included in a buggy.

**ERED
AND RTR!**

track test

OFNA MBX R2 PLUS

WORLD CHAMPION ENGINES

ULTRA
WORDS !!

Picco



The rear suspension includes lower H-arms with turnbuckle upper links. Note the long-travel, hard-anodized shocks.

DATA CENTER

VEHICLE TYPE 1/8 4WD .21-powered off-road buggy

BEST BUYER Any nitro enthusiasts who wants a tough, powerful buggy and those who want to try club-level racing

KIT RATINGS (poor, satisfactory, good, very good, excellent)

Instructions Good

Parts fit and finish Very good

Durability Good

Overall performance Good

SPECIFICATIONS

MANUFACTURER OFNA

MODEL MBX R2 Plus RTR

DISTRIBUTED BY OFNA

SCALE 1/8

STREET PRICE \$549

DIMENSIONS

Wheelbase 12.9 in. (328mm)

Width (F/R) 12.1/11.7 in. (308/297mm); adjustable front

WEIGHT

Total, as tested 128.6 oz. (3,647g)

CHASSIS

Type Channeled plate

Material Hard-anodized aluminum

DRIVE TRAIN

Type 14T clutch bell/51T spur

Primary ratio 3.64:1

Transmission ratio 3.14:1

Final drive ratio 11.45:1

Drive shafts (F/R) Universals/dogbones

Differentials 6-gear sealed bevel

Bearing type Rubber-sealed

SUSPENSION (F/R)

Type Pivot ball/lower H-arm with upper link

Shocks Hard-anodized, oil dampers

WHEELS

Type One-piece plastic

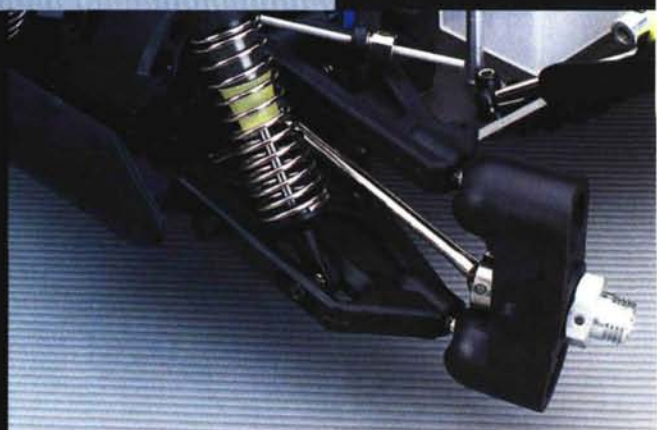
TIRES

Type Mounted and glued X-pattern



Left: the MBX R2's hard-anodized chassis plate is etched to show that it came equipped with a Picco engine.

Right: the R2's front suspension is the pivot-ball variety that allows quick width and caster adjustments to suit varied track conditions. Note the chrome-plated CV drive shaft.



LIKE THE CHASSIS PLATE, THE BIG SHOCK ABSORBERS HAVE BEEN HARD-ANODIZED.

KIT FEATURES

CHASSIS. The lower plate is hard-anodized and $\frac{1}{8}$ inch (3.18mm) thick. Its bottom surface is etched with the OFNA/Picco logo and a serial number that signifies that this buggy originally included the OFNA/Picco Sport pull-start engine (more on the engine later). This lower plate has very little kick-up in the chassis under the front suspension, but there is some. Chassis-plate kick-up helps the front suspension to soak up bumps a little better. Finally, all of the screw holes on the bottom have been countersunk to prevent screws from snagging anything underneath. The screws that hold the side mudguards are not countersunk, but they're not likely to catch on anything.

The engine-mounting screws are nice and large, so they're easy to install and remove, but they hang way below the chassis. When you've burned through a gallon or so of fuel, you'll probably have to replace them because they scrape the ground. When you replace them, just go for screws with a slightly lower profile.

The R2's typical chassis layout features radio gear installed along the right side and the engine and exhaust system on the left. The radio box is pretty large and is well suited to being used with a receiver of standard size and a 4-cell receiver battery pack. I highly recommend that you pack the radio box with foam to protect the electronics.

DRIVE TRAIN. You'll find the standard $\frac{1}{8}$ buggy shaft-drive components. A 3-shoe centrifugal clutch gets power from the engine to the drive train. The clutch shoes have individual return springs that stay in place better than certain single, circular springs. The clutch drives a 14T hardened-steel clutch bell that in turn drives a 51T hardened-steel spur gear on the center diff.

The steel spur gear drives a gear-type center differential that drives the front and rear gear differentials. The diffs are of the 6-gear variety that's common among the better $\frac{1}{8}$ cars. The R2 diff gears are made of some type of steel; it should be stronger than the cast-aluminum gears found in other cars. I did, however, manage to strip a set of internal rear diff gears during my testing. I installed and properly shimmed the replacement gears, and they lasted for the rest of my tests—and the toughest, too. We have never had any OFNA buggy internal diff gears fail in recent memory, so I'm inclined to believe that the gear stripping was more the result of improper shimming than because of the gear material's strength; in fact, OFNA later confirmed that on some of the early production kits, the diff gears weren't properly shimmed. The company will readily replace all such MBX R2 diff gears for any that have this problem.

Metal disc brakes are installed fore and aft of the bulkheads that house the center diff. A unique brake linkage with a knurled adjuster allows the front and rear brakes to be adjusted simultaneously. If you want to get fancy and introduce some front or rear brake bias, adjusting just one requires a little more effort.

Power goes through a nice-looking pair of chrome-plated CV drive shafts to the front wheels; the rear wheels are driven by standard dogbones.

SUSPENSION AND STEERING. The MBX R2 RTR's suspension uses pivot balls up front and lower H-arms with upper links in the rear. The rear suspension includes fixed wheel hubs with lower hinge pins, but there is an optional rear toe setting. The rearmost hinge-pin brace has "cams" through which the hinge pins are installed. Two cam-mounting positions allow two distinct toe-angle settings. The front end has an infinitely adjustable pivot-ball configuration. Of course, you don't have to adjust anything, but you can tweak the car for better handling if you ever want to try your hand at a local club's race.

Like the chassis plate, the big shock absorbers have



The Picco-made OFNA .21 Sport engine is a welcome addition to the R2. It's easy to start and tune, and it develops good power.

been hard-anodized. This coating prevents the shocks' insides from being worn by the shock pistons' constant motion. A molded "cap" (for lack of a better description) snaps over the lower end of the shocks. It helps to protect the more delicate seals around the shock shaft without going the full boot routine.

ENGINE AND ACCESSORIES. Its engine is one of the MBX R2's strong points. We rarely see a Picco engine in an RTR car, but the R2 has just that—a pull-start OFNA/Picco mill. This conservative four-port powerplant

INCLUDED ELECTRONICS & ACCESSORIES

Airtronics Blazer AM radio

The Blazer is a step up from the Blazer Sport, which is popular with RTR vehicle suppliers. The full-on Blazer system has the benefit of throttle and steering endpoint adjustments. This helps to avoid overloading the servos by making them travel farther than they have to when handling steering and throttle.

Among the R2's nicest features are the included accessories. OFNA throws in a killer double bag that could accommodate two cars, and it also includes every imaginable accessory. You need to supply AA batteries for the transmitter and receiver and a battery to power the glow igniter. It comes with suspension parts to convert the front end to a C-carrier design, miscellaneous extra parts, an X-wrench for the wheels, a glow plug and other fasteners, a bottle of Megatech fuel, a fuel bottle, a glow plug, an alkaline glow igniter, a curved body scissors and more. It's truly the most ready-to-run of the RTRs.



is easy to tune and very reliable in comparison with more highly strung Picco racing engines. It's likely to be much easier to tune than most, and Picco sport engines probably make as much power as top-of-the-line engines from lesser manufacturers, so you'll have plenty of power.

The engine has a polished header and a tuned pipe. The header is attached with a conventional wraparound spring, and it's insulated from the engine with a thick, silicone exhaust gasket. A sizable silicone coupler joins the header and tuned pipe. The sharp-looking, polished, two-chamber pipe has a molded silicone cap on its stinger to prevent fuel residue and oil from dripping onto your car seat when you drive home from the track.

BODY, WHEELS AND TIRES.

The good-looking, painted R2 body is available in only one color scheme, so if you and a friend both decide to buy this car (get yours first!), you might have to be a little creative to distinguish yours from his. If you don't, you might lose track of which car you're driving when you're at the track together. Mounting the body requires only a little simple trimming.

The X-pattern tires arrive mounted and glued to the one-piece plastic wheels, so you're ready to go as soon as you fire the engine.

PERFORMANCE

Firing up the potent Picco is as easy as starting any other engine. Unlike other Italian engines, though, it doesn't have excessive "pinch" when the piston reaches the top of the sleeve, and that makes cranking it when it's new much easier. The factory needle settings are close enough to start with, and it took only a couple of fine needle adjustments to tune it optimally.

The engine's punch combined with 4WD ensures a very solid acceleration.

"Lower" than average gearing maxi-

mizes the engine's already strong punch, so there's no lack of bottom-end grunt. Top end is also respectable, but this four-port engine is more at home coming out of corners and blasting over obstacles than screaming across a parking lot.

Instead of testing the R2's handling at a track, I ran it where regular RTR buyers will run it—in the park, the parking lot, over the hill and through the woods ... and all that stuff. Handling was very predictable on a wide range of surfaces; it's best described as "confident." I didn't feel that it was "edgy" or that it would flip at any moment; and it didn't scream for more steering response. The steering servo is a little slow for a car that runs this quickly, so the mild improvement that would result from the use of a rechargeable receiver pack would be welcome.

LIKES

- Upgraded Blazer radio with endpoint adjustments (limited availability).
- High-quality Picco engine.
- Includes everything you need to get rolling except for alkaline batteries.

THIS CAR SEEMS ABLE TO HANDLE SOME PRETTY HARD SHOTS

I clanked quite a few obstacles—the type that usually break parts—but the R2 survived my collisions. Of course, you shouldn't make a habit of hitting solid objects because I'm sure you could break parts, but this car seems able to handle some pretty hard shots. Only the rear wing broke; this seems to be made of somewhat brittle plastic, and it broke when I rolled the car. If you ever break the stock wing, I suggest a softer OFNA Hyper 7 wing as a replacement.

THE VERDICT

The designation "Sport" doesn't really capture the essence of the OFNA/Picco Sport engine. Yes, that's what it's called, but as I wrote earlier, it's a cut above average sport-class engines and possibly just as good as engines that other manufacturers refer to as "top-of-the-line." Don't get me wrong; it won't run step for step against a purebred Picco racing engine, but it will pretty much stomp a mud hole into what we usually mean by a "sport" powerplant. It's easy to start and tune, and it's rather powerful and dynamic for an RTR buggy.

I'm also very happy with the Blazer radio; with its endpoint adjustments, it's well suited to this application. It's a cut above the Blazer Sport, and it's a credit to OFNA that it's included. I would like a stronger steering servo, but that would take its price to a level that many RTR buyers are not willing to pay.

The car turns solidly. It handles the typical bumps and jumps of bashing in the backyard and thrashing at the track relatively easily; in fact, typical RTR buyers won't find any weak performance areas. It's strong, fast and relatively powerful, and it was relatively durable during my test sessions. Its chassis' design predates those of the current Hyper 7 and 9.5 buggies, but it's precisely what allows the MBX R2 to be sold in the same price range as the other two—even with a Picco engine, a painted body and tons of accessories. ■

DISLIKES

- The molded rear wing cracked easily in testing.
- Nothing is supplied to isolate the receiver from vibration in the radio box.
- Plastic wing washers have to be sanded down before you install the wing.

SOURCE GUIDE

AIRTRONICS (714) 978-1895; airtronics.net.
MEGATECH INTL. (201) 662-8500; megatech.com.
OFNA RACING (949) 586-2910; ofna.com.
PICCO (39) 039-601-5674; teampicco.com.

THE COMPETITION

MODEL	CHASSIS	BALL BEARINGS	DRIVE AXLES	SPUR GEAR	RADIO SYSTEM	STREET PRICE*	REVIEWED
DuraTrax Axis RTR	3mm aluminum	Shielded	Universal/dogbone	Plastic	Hitec Lynx	\$499	3/00
GS Racing Storm RTR	3mm aluminum	Shielded	Universal/dogbone	Steel	JR XR3	\$560	11/01
OFNA Hyper 7 RTR	3.5mm aluminum	Shielded	Universal/dogbone	Steel	Airtronics Blazer Sport	\$550	3/02
OFNA MBX R2 Plus RTR	3.18mm aluminum	Rubber sealed	Universal/dogbone	Steel	Airtronics Blazer	\$549	7/02
OFNA 9.5 RTR	3mm aluminum	Rubber sealed	Universal/dogbone	Steel	Airtronics Blazer Sport	\$514	—

*Prices vary with dealer.

Tamiya F2001

TAMIYA HAS A CULT-LIKE FOLLOWING FOR ITS F1 RC CARS. It started back in the '70s with the Tyrell P-34 6-wheeler and Mario Andretti's JPS car, and since then, Tamiya has consistently offered the best selection of F1 cars in the RC market. Until recently, the F103 was Tamiya's flagship F1 car, but it has just introduced an F1 vehicle for the 21st century, and it's the most fascinating yet.

The new F201 chassis breaks all the molds with a 4WD drive train and a bunch of other new "standards" under its body. Earlier Tamiya F1 efforts had excellent body detail, but their chassis didn't have anything in common with the full-size racecars. This F201 chassis looks as much like an F1 car's as the body does.

It's a unique and exciting package that is a significant departure from what has been done in the past.





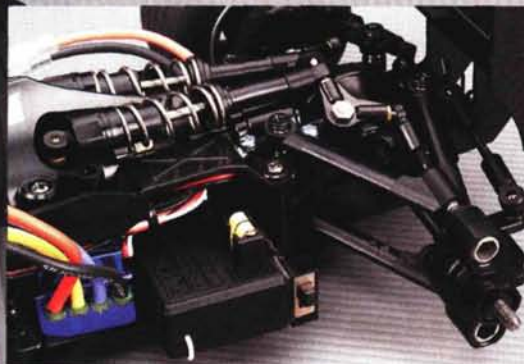
four wheel Drive Ferrari

COULD THE F201 BE THE NEXT TOURING CLASS?

Some touring cars have evolved into the opposite of what made them popular in the first place; many have become expensive, highly technical machines that take some of the fun out of racing. Touring cars started as an alternative; now, cars at the higher end of the touring-car field are more high-tech than the ones they replaced.

Tamiya's new F201 chassis could be the next touring car—not literally, as in an actual touring car, but generally. It emulates currently popular racing machines; there aren't any gumball, one-run, special-compound tires for it; it is reasonably priced and easy to build and, most of all, easy to drive.

Additionally, the F201 chassis certainly lends itself to wearing other F1 bodies such as McLaren, Williams and Renault and to numerous low-profile GT-style Le Mans bodies such as those from Cadillac, Audi, MG, Panoz and others. A broad range of current racing body choices, a very reasonable price and the present lack of high-tech, expensive performance accessories make it a slam dunk as a new entry point for fun, inexpensive racing. You in?



The rear suspension, like the front, is a pivot-ball design with pushrod-activated, inboard shocks. This design is the ultimate in adjustability and closely resembles the suspension on the real Ferrari F2001.

PRO TIP

If you want more power but are worried about finding a motor that will work well with the F201's fixed gearing, try a spec 19T motor such as the Trinity Chameleon and the Reedy Spec Bearing. The 19T motors appear to have rpm and power characteristics that are well suited to the stock gearing of the F201. The gearing is too tall for the typical low-turn modified motors, and that isn't such a bad thing!

Below left: the pushrod-activated, inboard-shock front suspension features offset lower shock ends that tuck the shocks in as close to the chassis as possible. Adjustable "split" pivot balls are used to attach the suspension arms to the chassis. **Below right:** Countersunk and recessed screw holes make the underside of the chassis smooth. The F201's front suspension features a nearly see-through fiberglass plate that is mounted across the underside of both lower arms. This stiffens the front end, which makes the car more controllable for the average driver.



DATA CENTER

VEHICLE TYPE 1/10, 4WD on-road Formula 1
BEST BUYER RC F1 enthusiasts; TCS competitors
KIT RATINGS (poor, satisfactory, good, very good, excellent)
Instructions Very good
Parts fit and finish Excellent
Durability Good
Overall performance Very good

SPECIFICATIONS

MANUFACTURER Tamiya Inc.
MODEL Ferrari F2001 with an F201 chassis
DISTRIBUTED BY Tamiya America

SCALE 1/10
STREET PRICE \$189
Price varies by dealer

DIMENSIONS
Wheelbase 11.02 in. (280mm)
Width 7.72 in. (196mm)
(adjustable)

WEIGHT
Total, as tested 51.4 oz. (1,457g)

CHASSIS
Type Monocoque
Material Molded plastic

DRIVE TRAIN
Type Shaft-driven 4WD
Primary 2.75:1; 20T pinion/
55T spur
Drive train ratio 2.6:1
Final drive ratio 7.15:1
Drive shafts Dogbones
Differentials Ball-type
Bearing type Metal-shielded

SUSPENSION
Type Double A-arm pivot-ball
Shocks Molded-plastic, oil-filled

WHEELS
Type One-piece plastic

TIRES
Grooved F1 rubber

THE F201 CHASSIS DISPENSES WITH THE OLD-SCHOOL DESIGN AND USHERS IN A NEW ERA.

KIT FEATURES

CHASSIS. The F201 dispenses with the old-school design and ushers in a new era. The monocoque chassis is considerably different from the previous generation F103 "pan-style" chassis, whose design was similar to 1/10- and 1/12-scale on-road cars.

The main chassis is divided into upper and lower sections. A lot of the chassis hardware is attached to the lower section, which is as flexible as a wet noodle before you join the two halves. But don't sweat it; the chassis gets plenty rigid once the upper structure is in place.

The proper name for this chassis is the F201, and it isn't to be confused with this particular F1 body—the Ferrari F2001. The body is the same as the latest Ferrari Formula 1 car (last year's design, to be precise), but it could just as easily have been a Williams or Renault body. But as far as the foundation goes, any future F1 Tamiya cars in this generation will presumably have the F201 chassis.

DRIVE TRAIN. This is where things get really interesting; the F201 is 4WD. This is unique for this class of car because the popular Tamiya F1 and the real Formula 1 cars haven't ever been 4WD. I must admit that it gave me pause when I first heard of 4WD in a Formula 1 car.

A Tamiya Sports Tuned motor that is mounted in-line on the right side powers the F201. It has a closed-endbell design that has been slightly "warmed over" by Tamiya to produce more power than a box-stock motor. Mounted on the motor is a 20-tooth pinion gear that drives a 55-tooth spur gear. The motor is attached to a molded motor plate that has fixed

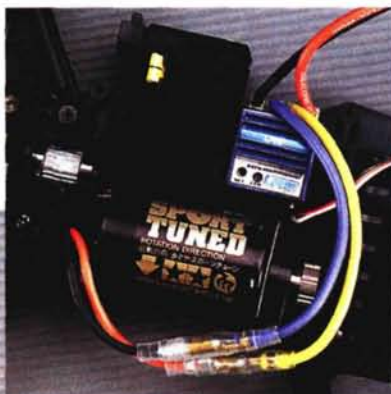


Each end of the car is fitted with a smooth ball differential. Strong metal outdrives and large 15x10mm ball bearings ensure long, trouble-free operation.

mounting holes. This means that only the included gearing can be used, but Tamiya America is lobbying its parent company for an optional, adjustable motor-mounting plate for owners who would be interested in changing the gear ratio.

The in-line spur gear drives two shafts: a short one directed toward the rear differential and a longer one for the front. The front shaft directly drives the pinion for the front differential, and the rear shaft drives a pair of stacked 17-tooth gears that step down to the pinion shaft for the rear differential. The drive shafts are made from a round, steel rod and have flattened ends that are captured in slotted cups. The shafts show some wobble, but it appears to be within reason when spinning at the limits of the included motor. That movement may be more of an issue with hotter, modified motors.

SUSPENSION AND STEERING. The suspension is one of the coolest aspects of the new design. It's incredibly similar in looks and function to those of the real F1 cars and features upper and lower double A-arms (with hubs that ride on pivot balls) and pushrod-activated inboard shocks!



The space available for the electronics is monopolized by the large Futaba 2PHKA receiver (it's the same size as most AM radios), so there isn't much room for a speed control, but the LRP Quantum Pro Reverse fits the remaining space nicely and performs very well for this application.

The suspension arms are attached to the chassis using unique split pivot balls that are mounted on the chassis with tapered, flat-head screws. As a screw is tightened, the split pivot ball is spread, and that permits adjustment of the clearance between the suspension arms and pivots.

The outer ends of the suspension arms have equally cool hardware; pivot balls support both the front and rear hubs. The threads in the hubs where the large adjusters are installed are very well molded. It's very simple to get the adjuster started in the tapered threads. Then the tapered threads in the hub make the adjuster more secure as it's screwed into its proper position. This may not sound like a big deal, but it's considerably easier to assemble than many other pivot-ball designs.

Pushrods and cantilevers actuate the oil-filled molded shocks. The one-piece shock shafts and pistons are basically nails with threads on the ends. The included shock oil, combined with the loose clearance of the shock "piston," makes the damping seem a little "watery," but later testing proved that it was a fairly good combination. The shocks certainly get the job done, but they're also on my wish list for upgrades (along with tons of

BUILDING & SETUP TIPS

Tamiya is one of the best when it comes to clear, easy-to-understand instructions and high-quality components. Any potential snags during assembly can be eliminated by closely following the instructions, but a few areas still might need a little attention.

EXTRA GEARS. If you have extra parts on hand once the drive-train assembly is finished, don't worry that you've missed a step. A complete extra set of molded gears, including a spur gear, diff ring gears and diff pinion gears is included with the kit.

SUSPENSION PIVOT BALLS. Be sure to install a 3mm screw inside the pivot balls before you press them into the suspension arms in steps 4 and 10. Installing the pivot balls without the screw in place will virtually close the slot, which will make it more difficult to attach the suspension arms to the chassis. Also, be sure not to overtighten the screws when you attach the pivot balls to the chassis; it will cause binding in the suspension.

STEERING HUBS. Despite their very similar, almost identical appearance, there is a difference between the front and rear hubs. To avoid confusion, be sure to separate them.

REAR TORQUE RODS. The rear torque rods, also known as the rear tie rods, have a suggested measurement of 12mm between the insides of the ball ends. That distance makes the linkage rods too short and causes toe out in the rear. Instead, set the rod ends so they're about 13mm apart.

YOU'LL NEED

- 2-channel radio
- Steering servo
- Electronic speed control
- Paint
- CA glue
- 6-cell Ni-CD or NiMH battery pack
- Battery charger

other heavy, shiny and potentially useless—but beautiful—aluminum). The chassis' narrow forward section allows only a single bellcrank steering design that's connected to the servo and wheels with mild-steel linkage rods that are similar to those used for the suspension pushrods. The very reasonable price of the kit means that it doesn't have the spoils of a full-tilt TRF kit, so at some point, I would add turnbuckles; they make steering adjustment much easier and are almost essential for fine-tuning suspension.

BODY, WHEELS AND TIRES. These parts of the car are the best, of course; Tamiya is king when it comes to exacting body detail, and the F2001 is no exception. Not only are the details unmatched, but Tamiya couldn't have picked a better subject to launch the F201 chassis—Michael Schumacher's world-championship-winning Ferrari. The best driver in the history of Formula 1 racing driving the best car (can you tell I'm a big fan?); it doesn't get much better!

The body has to be painted, but most of the detailing is done with decals. The front and rear wings are molded black plastic; I can understand this color choice if the wings will also be used on other cars, but white plastic makes painting and detailing a little easier to do. Still, you can't beat the included decal set that covers the wings; after you've draped them in Ferrari red, they leave little trace of the original black.

The rest of the decal sheet includes all of the other sponsor decals. The

only mistake I made was to let a NASCAR fan detail something as precise and awesome as an F1 car. Yes, in a pinch, I recruited *RC Car Action*'s body guru Bob Hastings to paint and detail my F2001. What I didn't remember is that this car isn't a replica of a Winston Spittoon grocery-getter; it's a racecar. Distracted by the presence of such a wonderful replica of a pure racing machine, Bob goofed up the sponsor panels behind the air intake. On balance, I guess it could have been worse; he could have installed one of those school-bus-size steering wheels with an 8-ball spinner for one-handed driving.

The wonderful F1 wheels and tires are right on the money. As far as compounds go, the tires are a little on the hard side—but not too hard. Foam inserts maintain the tire shape, and a unique tongue-and-groove mounting system doesn't require tire glue. I ran the car long enough to wear the tires out, but they stayed on the wheels. Granted, they wore down through the thin F1 "grooves" in just one battery pack on a very abrasive tennis court, but they lasted pretty well when run on asphalt.

PERFORMANCE

Anyone who has ever driven the previous generation Tamiya F103 car, or any other pan-car design, will have a unique appreciation of how difficult the true-to-a-fault 2WD F1 cars can be to drive. Get them away from a clean and prepared racetrack, and anything more than cautious application of the throttle will spin the car. Don't get me wrong; doing donuts is fun, but when it's your only trick, it gets old pretty quickly.

As a slave to certain details, whatever reservations I had about the awkwardness of 4WD in a Formula 1 car evaporated with the first pull of the trigger. The 4WD system works incredibly well; it allows reckless pulling of the throttle without fear of losing control. The Sports Tuned Tamiya motor isn't a fire breather, but it's well balanced for respectable performance and run time. A freshly charged battery nets a top speed of 22mph, and I got about 15 minutes of run time with a 2400 Ni-Cd battery pack.

LIKES

- Exceptional scale appearance.
- Ball differentials with steel outdrives.
- Great pushrod suspension design with inboard shocks.
- Kit includes a full, extra set of molded gears.
- Full ball bearings.

The F201 fixed gearing provides a nice balance of acceleration and speed with the included motor. The speed is lacking on a big track, but for typical conditions, the gearing is fine. Tamiya is working on an adjustable motor mount to facilitate gearing changes because some racers may want to tweak the drive train for maximum performance. I'm happy with the car just the way it is. If I want more speed, I can switch to one of the many fixed-timing 19-turn motors.

The F201's handling is nicely balanced. I was originally concerned that the fiberglass "stabilizer" plate would take away some steering and cause the F201 to understeer in the corners, but it was more neutral than I expected. There's still a comfortable understeer, but it's so close to neutral that the car is still responsive enough.

THE VERDICT

I love this car. Yes, I'm a Michael Schumacher and a Ferrari fan, but putting that aside, I find this car's realistic design features extremely interesting. Because of Tamiya's mastery of RC Kit molding and manufacturing, it's a pleasure to build and a blast to drive.

My interest in the F201 is not exclusively as a racer; I think it's cool for anyone who likes full-scale Formula 1 and who's interested in having the most fun with the least effort. But racing is in my blood, and I can't wait to leave all the motor lathes, tire cutters, motor dynos and tweak boards at home and just have a blast driving against similar cars on a track where the number-one objective is to just have fun! ■

DISLIKES

- Wings are molded in black plastic.
- Tires tend to wear quickly for a hard compound.
- Not much room for a standard-size speed control when using a larger, basic AM receiver.



THE 4WD SYSTEM WORKS INCREDIBLY WELL.

Futaba 2PHKA radio with S3003 servo

This version of Futaba's new AM radio has the added features of endpoint adjustments, a charging jack for optional Ni-Cd transmitter batteries, servo-reversing, an audible low-level battery alarm and steering dual rate. To prevent accidental movement, the steering and throttle trims are recessed and moved away from the steering wheel.

Others items used to complete the kit include:

Reedy R3K NiMH Sport Pack

LRP Quantum Pro Reverse speed controller



SOURCE GUIDE

FUTABA; distributed exclusively by Hobbico/Great Planes Model Distributors Co. (800) 637-7660; futaba-rc.com.

REEDY, a division of Team Associated.

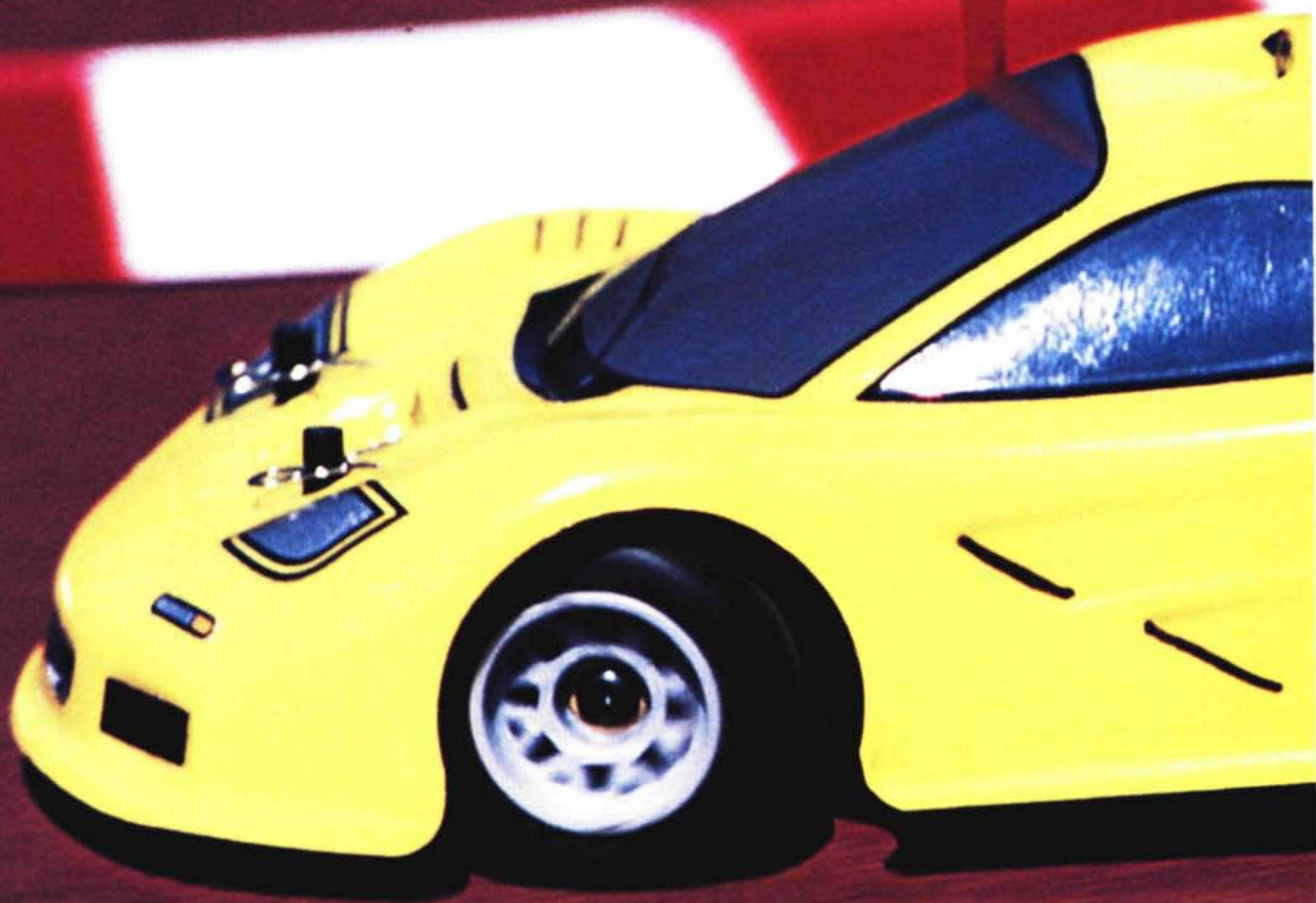
LRP; distributed by Team Associated.

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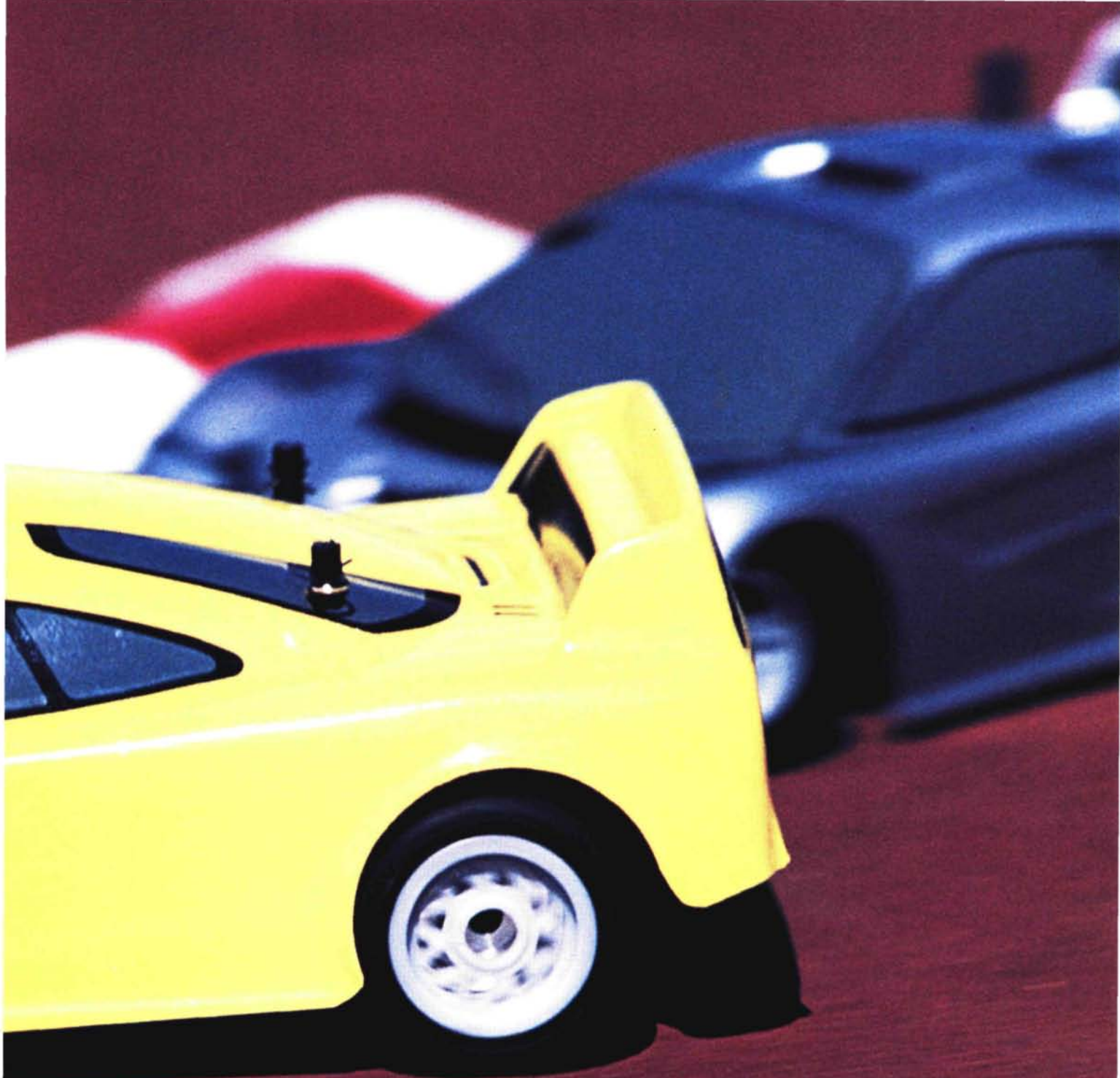
TEAM ASSOCIATED (714) 850-9342; teamassociated.com.

TRINITY PRODUCTS INC. (732) 635-1600; teamtrinity.com.

Dynamite Rocket Racer



THIS STORY IS ABOUT THE DYNAMITE ROCKET RACER, but the tale really begins with its competition. Kyosho's Mini-Z and HPI's Micro RS4 have been big hits in the sub- $\frac{1}{12}$ -scale category, and each one represents a very different design philosophy. Kyosho Mini-Zs are sold as 2WD ready-to-runs (RTRs) with proprietary, integrated electronics and include precisely detailed and painted "hard" bodies. HPI's 4WD Micro RS4 debuted as a traditional clear-body kit and accepts standard-size RC gear. The most dramatic distinction between the two is scale; the HPI car is relatively "big" at $\frac{1}{18}$ scale, while the Mini-Z is more kitchen-table-friendly at $\frac{1}{24}$ scale. But for all their differences, the cars have one thing in common—popularity. So to any company looking to



mini-size Pan PERFORMER

break into the micro-RC scene, the question is this: do you go for the Mini-Z market or the Micro RS4 market?

This brings us back to the Rocket Racer. Dynamite avoided choosing one flavor over the other and instead emulated both. The Rocket car is sold RTR with proprietary onboard radio gear and is $\frac{1}{24}$ scale (like a Mini-Z), but a Lexan body covers a chassis that is very similar to $\frac{1}{10}$ -scale hardware, and off-the-shelf radio gear can squeeze under the shell, if you wish to upgrade later (like a Micro RS4). It sounds like a good mix; let's see whether Dynamite got it right.



DATA CENTER

VEHICLE TYPE 1/24-scale, RTR, electric minicar

BEST BUYER Any enthusiast interested in smaller RC cars

KIT RATINGS (poor, satisfactory, good, very good, excellent)

Instructions Very good

Parts fit and finish Very good

Durability Very good

Overall performance Very good

SPECIFICATIONS

MANUFACTURER Dynamite

MODEL Rocket Racer RTR

DISTRIBUTED BY Horizon Hobby

SCALE 1/24

STREET PRICE \$130

Price varies with dealers

DIMENSIONS

Wheelbase 4.3 to 4.4 in. (105 to 113mm)

Width 3 in. (76mm)

WEIGHT

Total, as tested 8.1 oz. (231g)

CHASSIS

Type Double-deck, pan-type

Material 1.25mm fiberglass

DRIVE TRAIN

Type Direct drive

Primary 10T pinion/42T spur gear

Differential Ball

Bearing type Oilite bushings

SUSPENSION

Type (F/R) Sliding kingpin/sprung

T-plate

Damping None

WHEELS

Type One-piece plastic

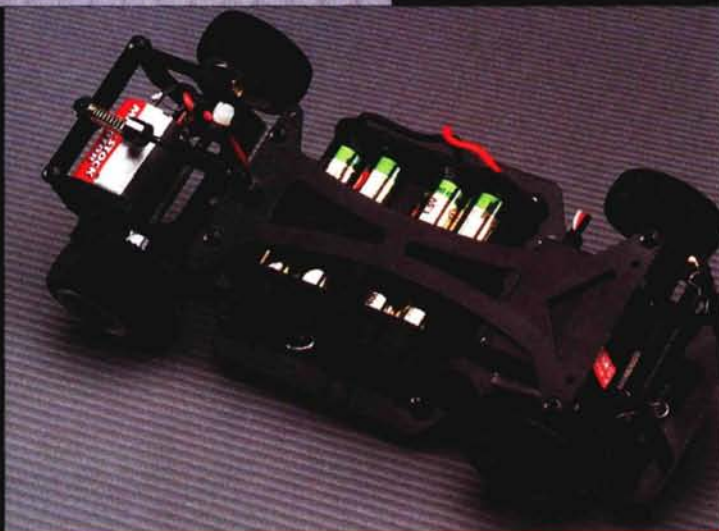
TIRES

Solid rubber



Left: the front suspension is classic pan car; the steering knuckles pinch small springs placed over the kingpins.

Right: With its electronics removed, the Rocket Racer's elegantly simple chassis is revealed. The batteries are easily removed by releasing the body clip on the battery box.



THE ROCKET RACER IS BASICALLY A PAN CAR WITH 1.25MM FIBERGLASS UPPER AND LOWER DECKS.

KIT FEATURES

CHASSIS. The Rocket Racer is basically a pan car with 1.25mm fiberglass upper and lower decks. The rear pod is cantilevered off the chassis on a T-plate that features three wheelbase settings: 105mm, 109mm and 113mm. To accommodate the included McLaren F1-style body, Dynamite assembles the Rocket Racer with the 105mm setting. A quick-release battery holder beneath the upper deck holds 4 AAA batteries, and a molded mount grabs the Rocket Racer's unusually thick antenna tube.

DRIVE TRAIN. Like all pan cars, the Rocket Racer is direct drive. The pressed-on, plastic pinion gear is a tiny 10T unit, and the spur gear has 42

Here's the flip side. Note the extra holes in the T-plate for wheelbase adjustments.



Above: O-rings around the Rocket Racer's "wheel drums" provide a friction fit for the car's plastic rims. The O-ring visible under the diff screw acts as a thrust spring.



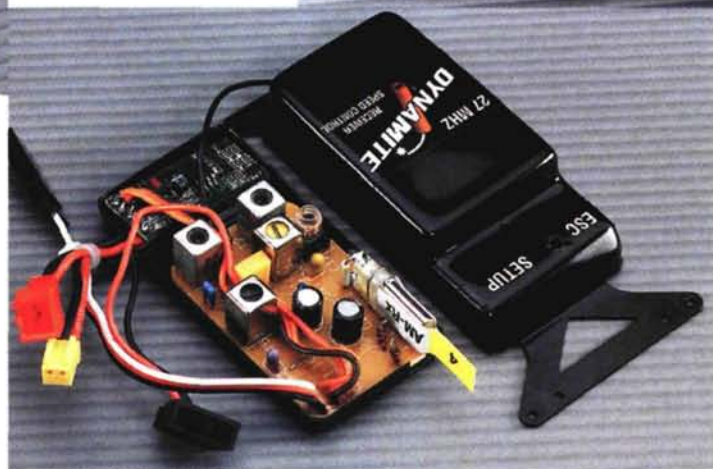
Here's the complete axle assembly; it's no different from what you'd find on any pan car. Note that the tire is solid and simply slides over the wheel. Dynamite used rubber cement to secure the tires on the rims.

teeth for a 4.2:1 gear ratio. At $1/24$ scale, you'd expect the Rocket Racer to have a solid axle, but Dynamite includes a ball differential instead. Eight steel balls, a caged thrust bearing and an O-ring "spring" give the diff a smooth action feel that rivals that of $1/10$ -scale cars. The axle appears thin at 3mm, but it's plenty robust for a $1/24$ -scale machine. Oilite bushings pressed into the plastic motor-pod plates allow the axle to spin freely.

SUSPENSION AND STEERING. The rear axle is suspended primarily by the T-plate, and it is fairly rigid when set for a 105mm wheelbase, but it gets more flexy at 109 and 113mm. A music-wire rod with a ballpoint pen type spring provides additional support, and a screw collar allows preload to be adjusted. Up front, plastic steering knuckles slide on their

Right: the Rocket Racer holds its FK-130SH motor behind the axle to keep the wheelbase short and uses a simple spring to suspend the rear pod.

Below: the receiver board (tan-colored, with the crystal poking out) dwarfs the ESC circuit board (the little guy in the back). The electronics cover is held to the chassis by screws, so there's nothing to untape.



& ACCESSORIES

Dynamite FK-130SH Mini Stock motor

The Rocket Racer's FK-130SH motor is similar to those found in Kyosho's Mini-Zs and provides similar performance. A plug-in connector that matches those found in HPI's Micro RS4 gives the motor instant compatibility with aftermarket electronics designed for the HPI car.

Rocket Racer transmitter

The Jules Verne looks of the Rocket Racer's transmitter didn't get rave reviews around the office, but the radio works well. There's a comfortable foam grip on the wheel, the trigger has a nice, firmly sprung feel and the trim knobs are easy to grasp and turn.

Dynamite Super Micro steering servo

The Rocket Racer's steering servo uses a standard connector and is completely separate from the ESC/receiver unit. That means you can plug the servo into a standard receiver if you upgrade your Rocket Racer with an aftermarket ESC, or you can use the Rocket Racer's servo in another vehicle later. The Super Micro servo performed well in testing.

Rocket Racer combined ESC/receiver

The onboard electronics look large with their black-plastic enclosure, but they don't take up any more room than a separate ESC and receiver would. The receiver crystal is easily removed for frequency changes, and a push-button setup system makes it simple to dial in the ESC if you ever need to; Dynamite sets it up for you before it boxes the Rocket Racer.

YOU'LL NEED

- 8 AA batteries for the transmitter
- 4 AAA batteries for the Rocket Racer



steel kingpins to compress springs trapped between the upper chassis deck and the steering knuckles. Like on the rear axle, the front wheels sport Oilite bushings.

The included steering servo is taped to the lower chassis and uses a short threaded link to reach the right steering knuckle. From there, a one-piece plastic drag link connects the right knuckle to the left. The setup is nice and tight—no sloppy Z-bends to deal with.

BODY, WHEELS AND TIRES. The Rocket Racer rolls on mesh-style rims molded in silver plastic and shod with soft rubber tires that are held on the

rims with rubber cement. The front wheels simply slide over the front axles in the conventional way, but the rear wheels are unique. O-rings snapped into grooves on the aluminum rear “drums” provide a friction-fit for the plastic wheels. The grip is strong, too; judging by the force required to slide the wheels off the drums, you’ll never have to worry about slippage in use.

Although it’s Kyosho Mini-Z-size, the Rocket Racer features a big-RC-type Lexan body. Dynamite shoots the shell one color for you and provides a sheet of decals for various light, scoop and slot details. Our test cars were equipped with “MC F1” shells that approximate the lines of the McLaren F1 supercar.

PERFORMANCE

For me, the big draw of little cars is their ability to run indoors, so I first turned the Rocket Racer loose in my living room. The nubby Berber carpet made for a rumble ride, but it tracked well and steered precisely. For indoor use, the car’s top speed was perfect—fast enough to make you slow down for tight maneuvers, but not so fast that you can’t clamp it down the hallway. After circling the coffee table with figure-8s

FOR INDOOR USE, THE CAR’S TOP SPEED WAS PERFECT.

around its legs, I followed the Rocket Racer into the kitchen. Since I was literally driving on linoleum, I thought the car would slip and slide, but the soft rubber tires hooked up well, and the smooth surface helped the Rocket Racer run a little faster than it was able to on the carpet.

The Rocket Racer’s ESC also performed well. It’s equipped with a push-button setup, but since Dynamite sets it at the factory, no setting is required; just install the batteries and go. Forward and reverse throttle were smoothly proportional, and fluorescent lighting didn’t cause glitching as long as the transmitter’s antenna was fully extended (as it should be).

I’ll keep the Rocket Racer handy for indoor action, but there’s nothing to stop it from playing outside, so I hit the driveway for some blacktop action. The Rocket Racer occasionally high-centered on pebble but otherwise took to pavement with aplomb. The solid rubber tires are a good choice, as they really do seem to work well on any surface. The only downside to running the Rocket Racer outdoors is the sense of speed; what seems fast when driving around furniture isn’t as exciting when crossing a wide-open driveway. Neighborhood kids thought the Rocket Racer really was a rocket though, and they were impressed by its speed; I guess I’ve been jaded by 1/10 scale!

LIKES

- RTR and painted; just add batteries.
- Quick handling for indoor action.
- Steering response easily adjusted from the transmitter.
- Quality electronics.

THE VERDICT

The Rocket Racer is a nice addition to the growing mini and micro categories; it’s RTR, fun to drive and costs less than its competition. It’s less detailed than its competition, and that might make it less attractive for scale-oriented buyers, but if all you want to do is drive, you’ll have no complaints.

If you’re into upgrading, you’ll be glad to hear that Dynamite will offer a line of aftermarket parts for the car. Dynamite’s hop-ups for the Micro RS4 and Mini-Z look hot, so we should expect equally trick gear for the Rocket Racer. But even in stock trim, you’re getting a lot: ball diff, reversing ESC, painted body, adjustable chassis—a nice package. As a rainy-day machine or basement Daytona 500 car, the Rocket Racer will be right at home. ■

DISLIKES

- Body shell is light on detail.
- “Ming the Mercless” transmitter styling isn’t for everyone (it works well, though).

SOURCE GUIDE

DYNAMITE; distributed by Horizon Hobby (800) 338-4639; horizonhobby.com.

THE COMPETITION

	CHASSIS	2WD/4WD	RADIO	ESC	SERVO	BODY	STREET PRICE*	REVIEWED
Dynamite Rocket Racer	Fiberglass	2WD	Rocket Racer	Forward/reverse	Dynamite	Lexan, painted	\$130	7/02
HPI Micro RS4 RTR	Fiberglass/plastic	4WD	HPI by Airtronics	HPI Micro Pro	MPI Micro	Lexan, painted	\$225	6/02 (kit)**
Kyosho Mini-Z	Plastic	2WD	Kyosho Perflex	Forward/reverse	Integrated	Plastic, painted	\$140	6/02**
BRP Super Car 18	Fiberglass	2WD	Not inc.	Not inc.	Not inc.	Lexan, unpainted	\$90	6/02**

*Prices vary with dealer.

**See “Micro-Car Meltdown” in the June 2002 issue for tests of these cars.



by Paul Onorato

OFNA didn't invent the "buggy monster" (Kyosho was first with the Nitro USA-1), but thanks to its Monster Blazer and Monster Pirate, OFNA has become a serious source for buggy-based monster trucks. The recipe of massive tires, a capable $\frac{1}{8}$ -scale buggy chassis and .21 power has served OFNA well and appeals to a lot of truck enthusiasts. But we all know what the newest rage is: the Traxxas T-Maxx and trucks like it.

Lighter and more agile, this new breed of monster machines sport smaller engines yet deliver equal or better performance than the giant-tire, old-school trucks. OFNA's answer to this new breed is the Dominator; it's a machine that combines the best traits of the Monster Pirate with lighter, low-profile rubber, some choice chassis and drive-train tweaks and a gorgeous, new factory-painted body. It looks leaner and meaner than any previous OFNA monster. Let's see whether it drives as great as it looks.



OFNA DOMINATOR A leaner, meaner monster



Photos by Walter Sidas

DOMINATOR
FEATURES

old & new

The Dominator looks all new, but there's still plenty of Pirate in the truck. That's a good thing; the Monster Pirate is a well-proven truck, and many items from OFNA's deep pool of upgrades can be bolted onto the new truck. Here's what's new to the Dominator and what's off-the-shelf from the Pirate.

NEW DOMINATOR
FEATURES

1 SLIPPER CLUTCH. OFNA wisely spec'd an adjustable slipper clutch for the Dominator. Mounted on the spur gear to spare the drive-line parts from extreme peak stresses, it softens the jolts from high-traction launches, throttle-on landings and high-speed runs on rough terrain.

2 BUMPERS AND SKIDPLATES. Chrome-plated front and rear bumpers mounted to the shock towers with beefy plastic standoffs add style, and thick, plastic skidplates protect the chassis and allow the truck to just skip off raised obstacles instead of being stopped by them.

3 SHOCKS AND SWAYBARS. The addition of front and rear swaybars and new larger-

volume shocks increases the

Dominator's bump-handling capability. Soft silicone boots shield the shafts from dirt.

4 BODY, WHEELS AND TIRES. OFNA gets high marks for the Dominator's good-looking, pickup truck body that sports a red-to-white fade paint job and a chrome-plated roll bar and side-view mirrors. This body is a keeper.

New, light, low-profile wheels and tires found their way onto the Dominator and significantly add to its updated appearance.

5 NEW CHASSIS BRACES. On the Pirate, to reduce chassis flex, OFNA used two braces made of threaded steel rods and heavy-duty ball ends: one between the rear shock tower and center bulkhead and another from the bulkhead to the front gearbox support. The Dominator has a similar design but varies it with a longer front brace that's mounted directly on the front shock tower.

the Dominator's backbone. Channeled plate sides make it an extremely rigid platform.

7 SUSPENSION COMPONENTS. Upper links on both ends of the truck are adjustable, and the front units were designed for caster changes. The lower A-arms are made of thick plastic and are built with some forgiving flex instead of part-breaking rigidity.

8 DRIVE TRAIN. Robust drive components were transplanted from the Pirate to the Dominator. Dogbones receive the spin from a centrally located, steel spur gear and feed grease-filled planetary gear diffs. Up front, CV-joint front axles use dogbones to turn the rear wheels.

9 HYPER .21 ENGINE. The huge, black 8-fin head cools the big .21 powerplant that features a rear-mounted pull-start, a 3-needle carb and true ABC piston-and-sleeve construction. The exhaust exits from the rear of the engine into a large header with a big tuned pipe.

RETURNING MONSTER
PIRATE FEATURES

6 ALUMINUM CHASSIS. A 3mm-thick, blue-anodized chassis plate makes its return as

SPECIFICATIONS

MODEL Dominator
MANUFACTURER OFNA
SCALE 1/8
PRICE \$560
Price varies with dealers

DIMENSIONS
Wheelbase 12.75 in. (324mm)
Width 15.5 in. (394mm)

WEIGHT
Total, as tested 163 oz. (4,621g)

CHASSIS
Type Channeled plate
Material Aluminum

DRIVE TRAIN
Type Shaft
Primary Clutch bell/spur
Drive shafts (F/R) Universals/
dogbones
Differentials Planetary
Bearing type Shielded bearings

SUSPENSION
Type (F/R) Lower A-arm with
adjustable upper A-arm/lower
A-arm with adjustable upper link
Shocks Coil-over, oil-filled

WHEELS
Type Split 3-spoke
Dimensions 3.5x2.25 in.
(88.9x 57.15mm)

TIRES
Type Treaded "swoosh" pattern

What you get
—and what you'll need

OFNA continues to push into the RTR scene by offering the Dominator with the full factory built and painted treatment, plus a few extras. Here's what you get; the only thing left to add is transmitter batteries.

➔ AIRTRONICS BLAZER SPORT TRANSMITTER AND RECEIVER

This is Airtronics' base-line radio system, and it's quite capable of controlling the Dominator. It has all the necessities: throttle and steering trims, servo-reversing switches, an LED battery-status indicator and a charging jack for use with optional Ni-Cd batteries.

➔ AIRTRONICS 94102 STEERING AND THROTTLE SERVOS

These servos are standard Airtronics units; they perform reliably and produce about 40 oz.-in. of torque. The standard servo does a satisfactory job of pulling the throttle open and closed and will squeeze the brake tightly enough to stop the truck in a reasonable distance, but the 94102 steering servo just doesn't have the grunt needed for a big .21 truck. Unless you plan to make only w-i-d-e turns, an upgrade to a steering servo with 100 oz.-in. of torque (or more) is strongly suggested.

➔ MEGATECH HIGH VELOCITY RACING FUEL

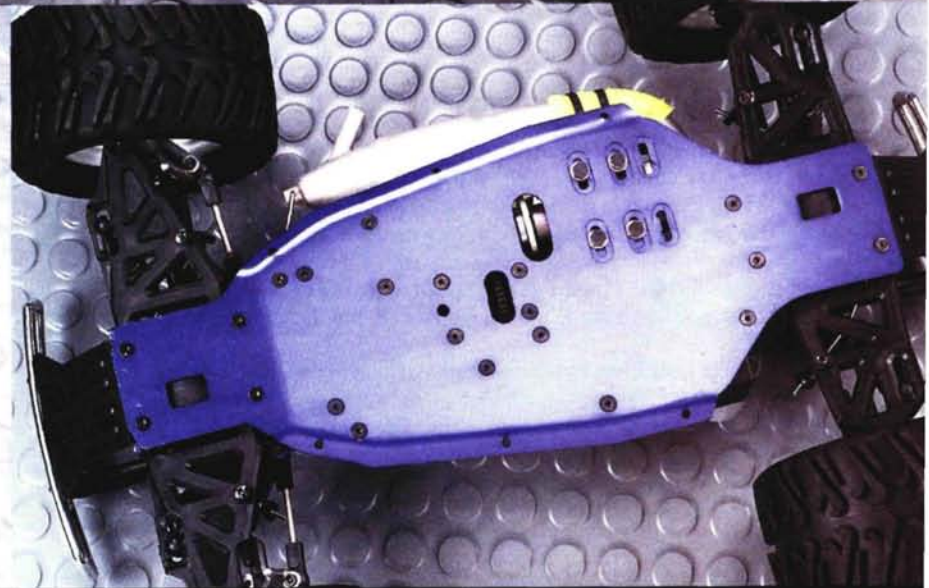
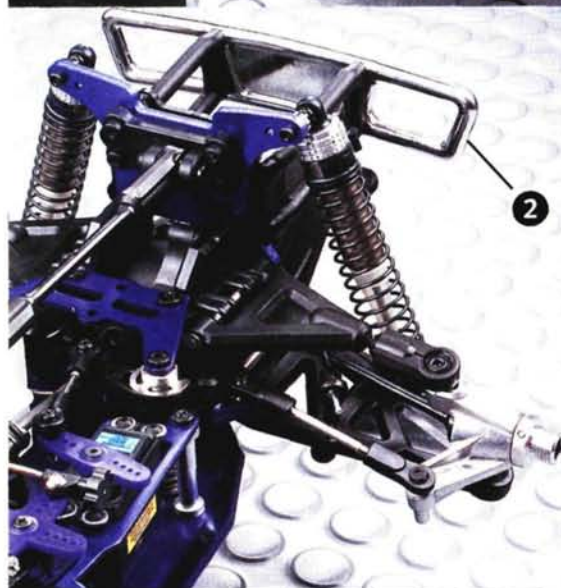
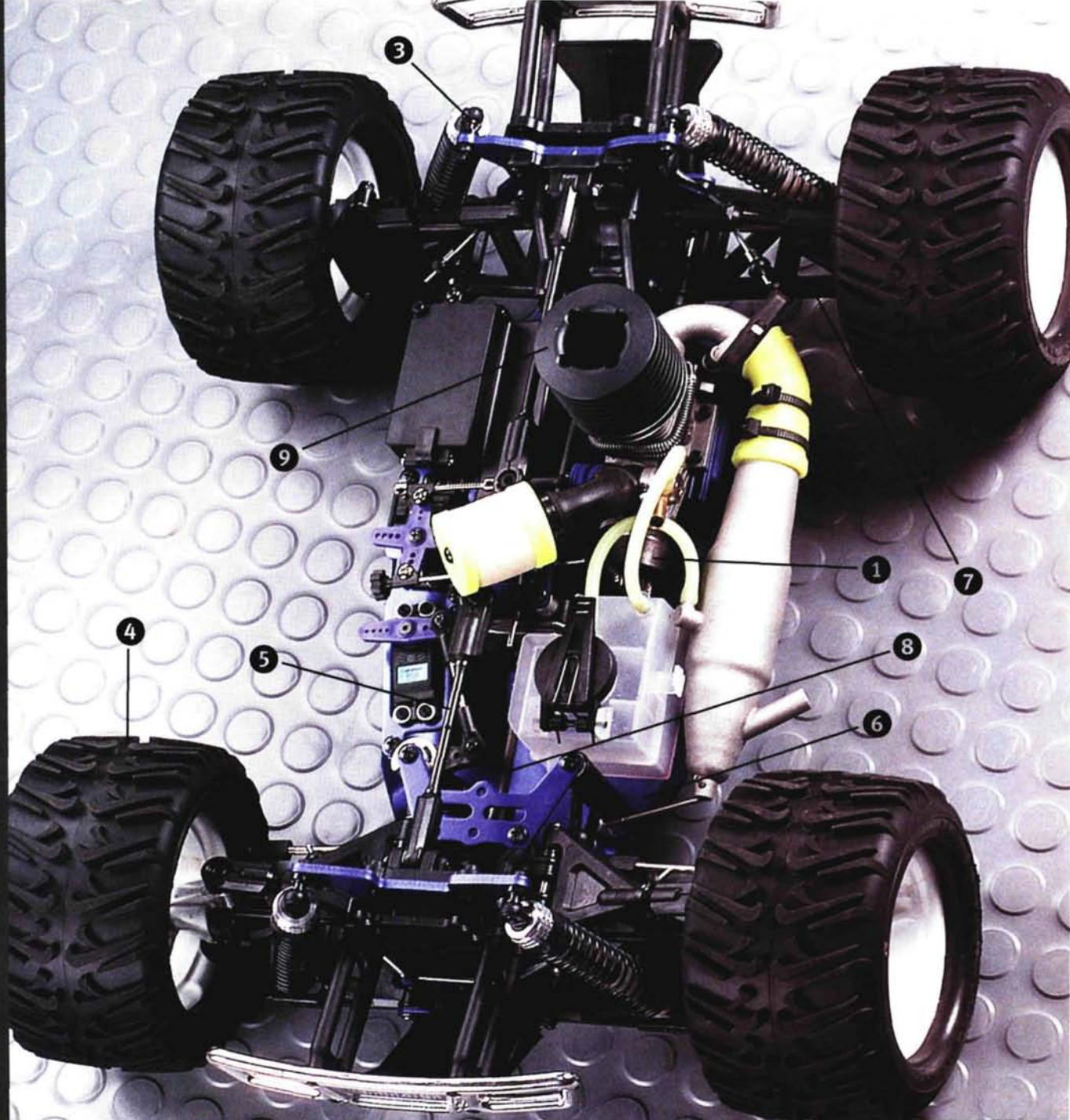
OFNA even includes a bottle of fuel with the Dominator! The Megatech High Velocity juice features a "Syntol oil blend" and a mixture of 25-percent nitro.

➔ OFNA GLOW STARTER

This plastic glow starter isn't sexy, but it does a good job of heating the truck's glow plug. The glow starter accepts sub-C rechargeables as well as full-size C alkalines.

Bottom left:
the large,
cast-alumi-
num steering
knuckles are
clearly built
to last. For a
stiffer front
end, the
front chassis
brace links
the center
bulkhead
with the
front shock
tower.

Bottom right:
new front
and rear
skidplates
protect the
chassis.
Except for
the four
engine-
mounting
screws, all of
the screw
heads are
flush with
the chassis
plate.



WHERE THE RUBBER MEETS THE ROAD

It's an old racers' adage: "If you can save one ounce of rotating weight, it's as good as saving two ounces of static weight." The numbers probably don't work out quite that perfectly, but the theory is sound. A reduction in rotating weight contributes significantly more to a vehicle's performance than if the same amount of mass is trimmed from non-rotating parts. And on a monster truck, nothing accounts for more rotating weight than the wheels and tires. OFNA whacked out a big chunk of heft by chucking the Monster Pirate's Shaquille-O'Neal-size sneakers in favor of more svelte shoes (and as long as I'm working the footwear analogy, I'll point out that the Dominator's treads appear to be made up of Nike swooshes). How much heft is gone? Each of the Monster Pirate's wheels and lugged tires rolls in at 14.7 ounces, and the Dominator, with more rim and less tire, steps lightly at 9.8 ounces. That's a difference of 5 ounces per wheel—a total of 20 ounces or 1½ pounds! As any racer will tell you, that's as good as lopping 2½ pounds from the chassis.



The big Hyper .21 Turbo launches the truck off the line with authority. Proper engine tuning is possible thanks to the 3-needle slide carb.

I DRIVE IT

To see just how well it steers in out-of-the-box trim, I took the Dominator for a quick jaunt with its standard steering servo. As expected, the servo strained to point the truck's wide tires, and only when it was up to speed could it manage wide, sweeping turns. I figured that any true trucker would quickly install a stronger steering servo, so that's what I did. Out came the factory-installed 94102, and in went an Airtronics 94358Z with 200 oz.-in. of torque. The Dominator attacked the track with new vigor and impressed me with its buggy-like handling.

The large-diameter rims and low-profile rubber make the Dominator far more responsive than the Monster Pirate ever was (or could be), and because of the reduction in rotating mass, it launched harder than any previous OFNA monster. The "Big D" quickly gets up to a top speed of 38mph and sounds as if it could go still faster with a taller gear—if that's your goal. As is, the truck has mounds of torque to flatten any hill or slog through grass and sand, and it's probably better left with its stock gearing.

Cruising rough terrain wasn't a problem. In addition to the noted acceleration improvements (thanks to the Dom's lighter rolling stock), OFNA's weight-loss program also improves suspension action. The lighter rubber can cycle up and down over bumps much more quickly, and that makes the truck feel far more in touch with terra firma.

In the turns, the swaybars keep the chassis relatively flat and pitching the truck into corners reveals a slight push that is easily overcome with a blip of brake.

Right: soft silicone boots shield the shock shafts from dirt. The swaybar improves handling.



OFNA added a slipper clutch to protect the drive train in hard landings. A large metal, vented disc brake with padded calipers brings the Dominator to a stop.

I set up the trusty RC Car Action skateboard ramps to flight-test the Dominator and began blasting out some Knievels. Big-tire trucks can be a real handful in the air because they usually drop their rear wheels and need a big clamp on the brakes to level out, but flying the Dominator was cake. Its quick acceleration made it easy to squirt off the ramps with a short run-up, and it generally launched flat or just slightly nose-high. The biggest launches caused the Dom to add a rebound hop to the landings, but the truck held its line well.

In all respects, the Dominator is an impressive machine and should be greeted with approval by anyone who appreciates a truck with more athletic handling capabilities. Those who just want the biggest tires and the highest-riding truck probably won't be too stoked with the Dominator's smaller rolling stock (that's why OFNA will still offer the Monster Pirate), but for performance-minded MT fans, the Dominator is the OFNA to get. ■

SOURCE GUIDE

AIRTRONICS (714) 978-1895;
airtronics.net

MEGATECH INTL. (201) 662-8500;
megatech.com

OFNA RACING (949) 586-2910;
ofna.com

THE VOTES ARE IN!

After hours of sorting and counting, it's time to reveal the winners of the 2002 Readers' Choice Awards. You'll find that many of your favorites have passed the test of time and have returned to claim the top spots; others have stepped down to make way for the latest trend-setters. Did your picks win? Let's find out.

RADIO CONTROL car action READERS' CHOICE AWARDS 2002

BY THE STAFF OF
RADIO CONTROL CAR ACTION

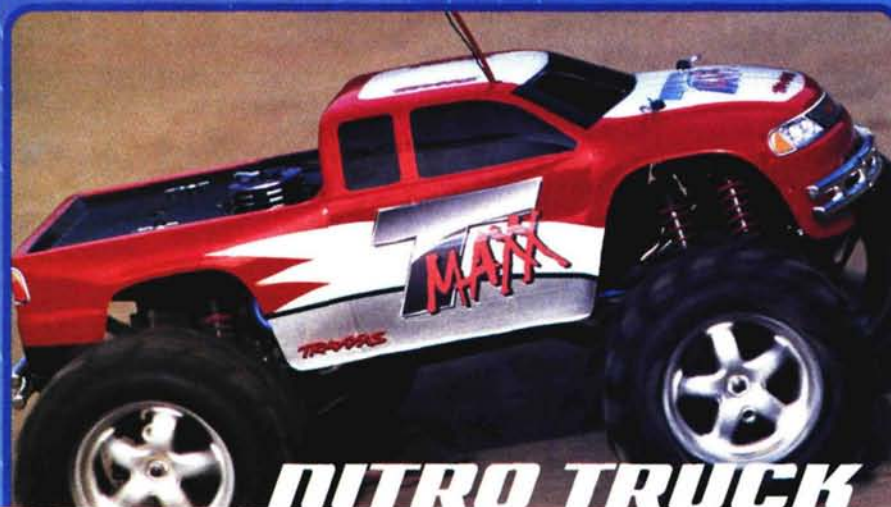
Team Losi Triple-X Kinwald Edition

The Team Losi Triple-X is back for a third term, but this time, the Kinwald Edition was the clear winner. It features a full graphite package, titanium turnbuckles, a lightweight top shaft and blue-anodized components that World Champion Brian Kinwald uses on his buggy—all for a price that's way below what you'd pay for the upgrades separately.

- 2 Team Associated B3
- 3 Traxxas Bandit



ELECTRIC BUGGY



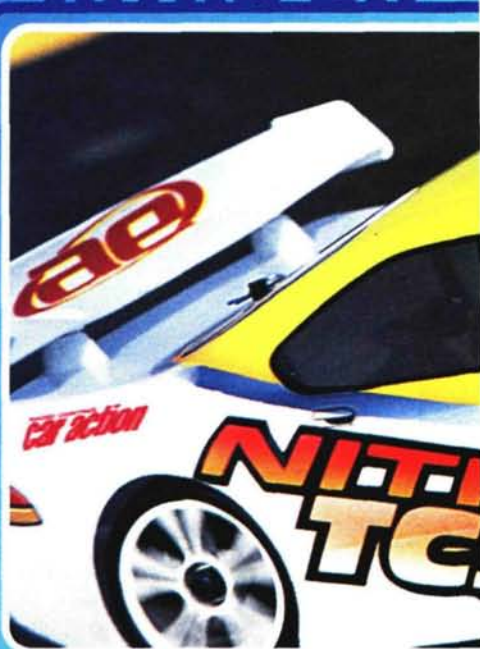
NITRO TRUCK

Traxxas T-Maxx

The Traxxas T-Maxx returns as your favorite in this category. This really isn't surprising; the T-Maxx has been a top seller for the past two years. With its 2-speed reversing transmission and super-plush suspension with more than 3.5 inches of suspension travel, it sets new standards in the monster truck category. Everyone from first-time hobbyists to seasoned racers loves the T-Maxx, and that's why it tops the Nitro Truck category for the second consecutive year.

- 2 Team Losi Triple-XNT
- 3 Team Associated RC10GT

NITRO ON-



YOUR

ELECTRIC TRUCK



Traxxas E-Maxx

The Traxxas E-Maxx barely edged out the Team Losi Triple-XT Matt Francis edition to win in this category, but we're not splitting hairs here. Like the T-Maxx, the E-Maxx has raised the bar in monster trucking. Note its twin, 550, fan-cooled motors, 14.4V power system, 2-speed, shift-on-the-fly transmission, 3-channel radio system and Novak-built ESC.

2 Team Losi Triple-XT Matt Francis Edition

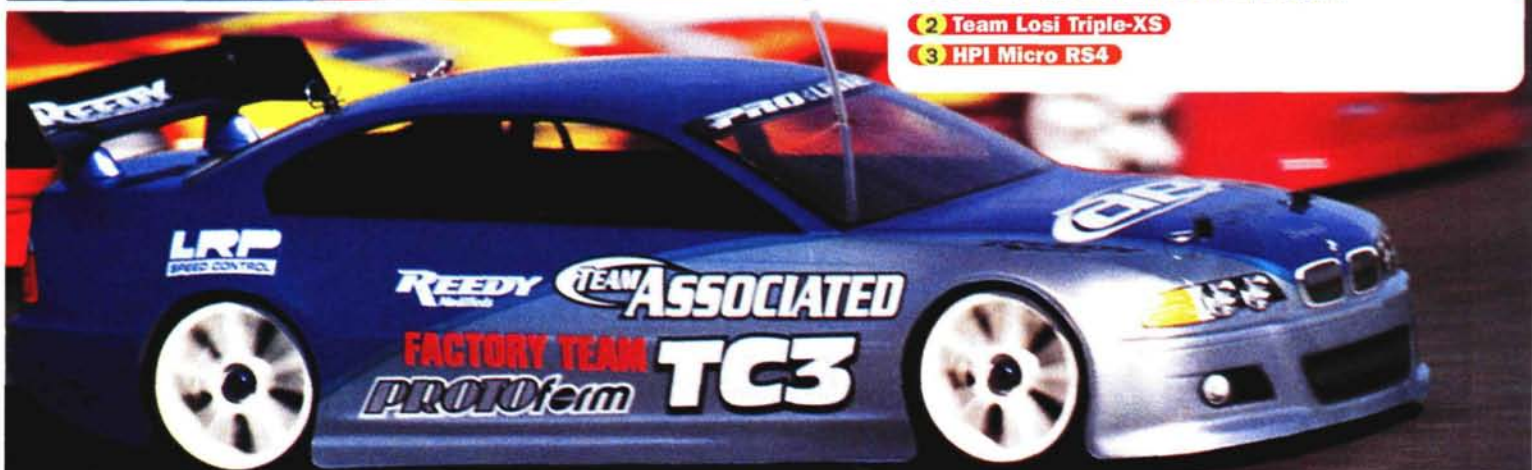
3 Team Associated T3

Team Associated TC3

The TC3 returns for the third consecutive year as your favorite electric touring car. Given its popularity at the track and its huge aftermarket support, we weren't surprised that you voted it into the number-one spot again.

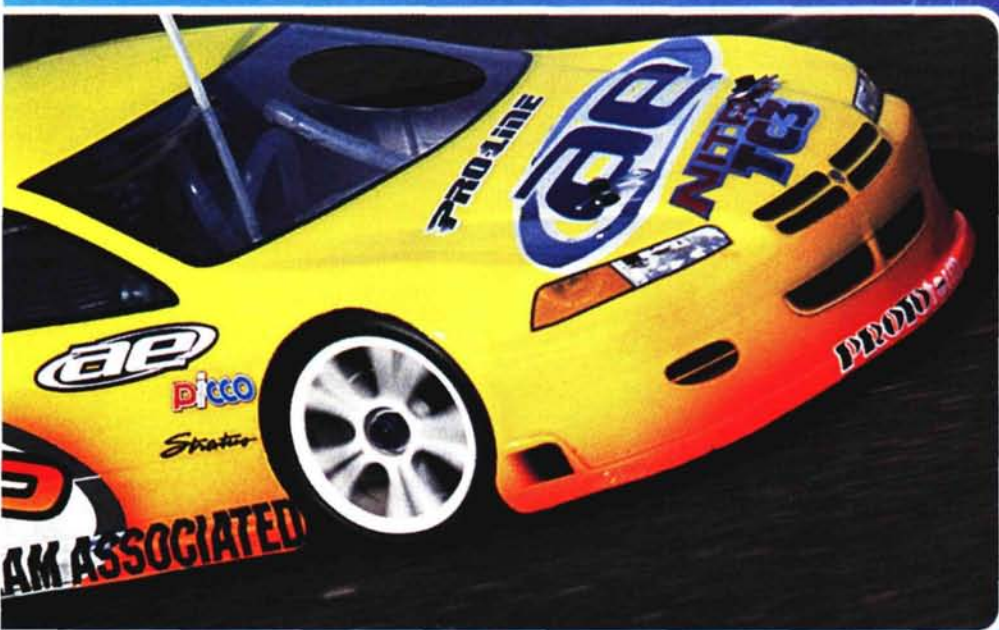
2 Team Losi Triple-XS

3 HPI Micro RS4



ELECTRIC ON-ROAD/TOURING CAR

ROAD/TOURING CAR



Team Associated Nitro TC3

The production Nitro TC3 was released only a few months ago, and it's already your favorite nitro-powered on-road car. We're not surprised; the Nitro TC3 is jammed with racing features, and it's incredibly easy to set up and drive. The shaft-drive 4WD system gets the power to the ground efficiently, and a precision disc-brake system slows the TC3 down. It's also easy to build and maintain—a major bonus that racers and other enthusiasts appreciate.

2 Trinity Reflex NT

3 HPI Super Nitro RS4

FAVORITES

car action READERS' CHOICE AWARDS 2002

Kyosho Inferno MP 7.5

The five-time IFMAR World Champ MP 7.5 is back as your number-one choice. Its race-proven suspension, low-CG drive train and rugged construction contribute to its success, and its benchmark track performance earns it the right to bask in the limelight for the second year in a row.

- 2 GS Racing Storm
- 3 OFNA Hyper 7



RC INNOVATION



Nitro Elements ArtAttack Snow Mobile

This is the first time our "RC Innovation" award has gone to an RC snowmobile. But until Nitro Elements came along, there just wasn't a production RC snowmobile! The ArtAttack combines a scale snowmobile drive train and suspension with big-block nitro power for a unique wintertime experience. It's a blast to drive in snow, and with its optional front ski-wheels, it can even take on dirt and pavement.

- 2 Pro-Line Maxx Race Conversion
- 3 HPI Micro RS4

FUEL

Trinity Monster Horsepower

Once again, Trinity's Monster Horsepower comes out on top. Maybe you picked it because Trinity says it's blended with 99 percent pure methanol and nitromethane and includes a 12-percent blend of synthetic and castor oils. Or maybe you chose it because the stuff just works!

- 2 Dynamite Blue Thunder
- 3 DuraTrax O'Donnell



Airtronics M8

Airtronics has dominated this category since we started handing out awards in 1996. With its 10-model memory, easy programming and comfortable, well-balanced design, it isn't surprising that the M8 is used by more pro drivers than any other radio system. It's your favorite radio system, too—for five straight years, no less!

- 2 Futaba 3PJ
- 3 Hitec Lynx 3



Trinity VIS-Matched Panasonic Stock Metal Hydride Team Cells

Trinity owns this category; since the Sanyo 2000s won in '97, Trinity VIS-Matched cells have always taken the top spot. For the last three years, VIS-Matched Panasonic 3000mAh cells have been your favorites—first with the originals in 2000 and then with the Stock Metals in 2001. They're back as your favorites this year—no doubt because they have the right capacity for modified racing and the punch you need for stock racing.

- ② Trinity Team Matched Sanyo 3000 HV
- ③ Reedy Zappers 3000 HV



BATTERY

Pro-Line Maxx Masher

Pro-Line off-road tires have been your favorites for six years in a row. Most recently, the company's Maxx Mashers have held the top spot, but that isn't surprising; after all, there's no better way to add style and improve your Maxx Truck's handling than by installing Maxx Masher tires. Pro-Line sweeps this category and takes the second- and third-place honors, too.

- ② Pro-Line Dirt Hawg 2
- ③ Pro-Line Bow Tie



TIRES

Trinity P2k2

A Trinity competition stock motor has topped this category since our awards were introduced. Trinity's latest stocker, the P2k2, is a higher-rpm version of the original. Get the standard model or the factory-tuned Pro version with high-output springs and brushes; either way, it's your top pick.

- ② Trinity P-94
- ③ Reedy Ti



Matt Francis

Team Trinity/Team Losi's Matt Francis is your favorite driver this time around in the biggest upset in the 2002 "Readers' Choice Awards." In addition to being a fine racer, Matt is a true RC spokesman and a hell of a guy. You earned it, bud.

- ② Brian Kinwald
- ③ Billy Easton

READERS' CHOICE REGULARS

Since we presented our first Readers' Choice Awards back in '96, several of your favorite brands have consistently taken the top spots. These category leaders have been your top choices for more than half a decade.

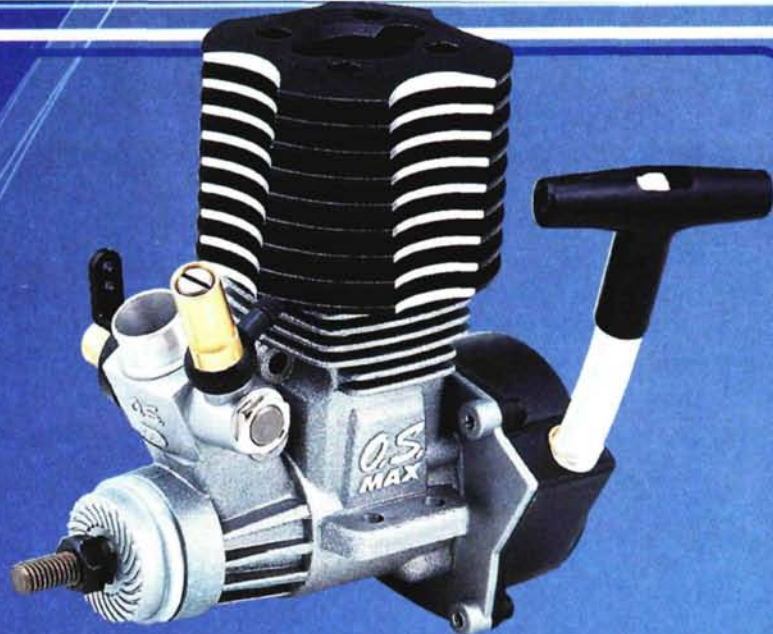
Brand	Category	Readers' Choice wins	Products
Novak	ESC	7	Tempest Pro ('96), Cyclone ('97-2001), Cyclone C2 (2002)
Trinity	Motor	7	Midnight ('96-'97), Midnight 2 ('98), Paradox ('99), P2k (2000), D4 (2001), P2k2 (2002)
Trinity	Battery	6	Sanyo 2000 ('97-'99), Panasonic 3000 (2000), Panasonic Stock Metal Hydride (2001-2)
Pro-Line	Tire	6	Square Fuzzie ('97), Dirt Hawg II ('98), Bow Tie ('99), Dirt Hawg II (2000), Masher (2001), Maxx Masher (2002)
Airtronics	Transmitter	7	Caliber 3PS ('96-'97), M8 ('98-2002)
Associated	Truck	5	RC10T2 ('97-'98), T3 ('99-2001)



O.S. Engines .15 CV-R

The O.S. CV is still your favorite; a heap of entries arrived with the CV checked off in the engine column. The .12 CV engine took the top spot last year, but now it's the .15's turn. O.S. engines are known for their high quality, high performance and rock-solid reliability. No wonder you chose O.S. yet again.

- 2 Trinity Picco .15
- 3 Mugen MT-12



ENGINE

ELECTRONIC SPEED CONTROL



Novak Cyclone 2

Novak will have to install another display case in its lobby to make room for its seventh "Readers' Choice Awards" trophy. It earned six trophies for the Cyclone series ESCs, but the C2 has been your favorite for the last two years. This isn't surprising when you consider that the C2 is completely programmable (via the Pit Wizard software built into the Novak Millennium Pro or with the handheld Pit Wizard). Even if you don't have the Pit Wizard software, you can still choose from three built-in profiles to suit your particular needs.

- 2 Novak Super Rooster
- 3 LRP Quantum

Pro-Line Jeep CJ8

Pro-Line's Maxx truck bodies are extremely popular and have enjoyed top honors in this category for the past two years. With that in mind, it's no wonder that the Jeep CJ-8 has become your favorite. The CJ-8 body fits the T-Maxx chassis perfectly and captures the classic squared-off body panels and egg-slicer front grill that have always been Jeep trademarks. ■

- 2 Pro-Line Cadillac Escalade
- 3 Pro-Line GMC Sierra

Novak Millennium Pro

The Millennium has been your favorite charger for the past two years. With updated features such as Novak's exclusive NiMH 2 charge mode (which uses a carefully refined NiMH-specific algorithm and triple detection system to safely charge your NiMH cells) and built-in Pit Wizard software (which allows you adjust the various parameters of any programmable Novak ESC), the Millennium Pro has what it takes to carry on the winning tradition.

- 2 MRC Super Brain 959
- 3 Novak Ionic



CHARGER



BODY

BY GREG VOGEL & PETER VIEIRA

Prototype Team Losi 4-wheeler wins Off-Road Champs

While at the Team Losi Off-Road Championships, Kevin spotted Matt Francis testing a 4WD buggy prototype built around a Triple-XS single-belt drive train that Matt used to win the event. We're guessing that it will be called the "Triple-X4" when, or if, Losi ever puts it into production, but it's way too soon for anything official.



No Off-Road Worlds for Masami

Word has it that Masami Hirotsuka will bow out of the IFMAR Off-Road World Championships scheduled for

early May. According to our source, Masami and Masaki (his dad and mechanic) feel that back-to-back running of the On-Road and Off-Road Worlds will not allow them to prepare adequately for both. Masami will run only the On-Road event in both Touring Car and 1/12 scale.

BOARD WALK

FROM THE
RADIOCONTROLZONE
.COM BULLETIN BOARD

Futaba 3PDF FM radio

RAYDEE: What do you guys think about this radio? Is it worth the money? Is it glitch-free?

ADAM LANCIA: I have owned a 3PDF for almost five years, and I haven't had a single problem with it. I love this radio system. It's a huge step up from an entry-level radio, and it's FM with most of the features of the 3PJ.

P2k2, P2k, or Green Machine 3?

SLITCH: The debate is now open: the P2k2, P2k, or Green Machine 3?

SABOTEUR: The P2k is designed for tight tracks because it has good torque for powering outta the turns. The P2k2 is for medium-size tracks with a combination of tight and medium turns. The GM3 is for tracks where speed is demanding. For off road, I'd go with the P2k Pro.

Best touring car?

BIG WORM: What is the best on-road touring car? I want good off-the-line power and a lot of speed.

SABOTEUR: There isn't really a "best" touring car. You will hear a lot of opinions. The Serpent Impulse, Yokomo GT-4 and Mugen MTX-2 are pro-level cars for racers who want true performance. The HPI Racer 2 and OB4 Pro are also great racers and are for drivers who want a pro-level car at an affordable price. The DuraTrax Street Force GP is a good bashing nitro touring sedan that hits 50mph out of the box. It's good to do a little drag racing.

BE HEARD!
LOG ON AT WWW.
RADIOCONTROLZONE.COM



Losi's BIG SHOW

Our "4x4" guy, Kevin Hetmanski, recently returned from the first annual Team Losi Off-Road Championships, which he proclaimed a success. The weather was great and the



focus was on the local heroes instead of the factory talent, so Team Losi earned a lot of praise from the racers. Brian Kinwald took the prize in Mod Truck, and Matt Francis won 2WD and 4WD, but the Champs was really more about the "regular guys." Jason Schlick won 2WD Stock, Jeff DuRocher took the Sportsman Mod Truck and 2WD Mod races, and Pat Townes had a blast winning in Stock Truck.



HARA WINS WORLDS WARM-UP

Factory HPI/Team Orion/Hot Bodies hench Atsushi Hara has won the 1/10-scale Touring Car World Championship warm-up race in Krugersdorp, South Africa; this suggests that the defending world champ may very well take another IFMAR title. After setting the TQ pace, Hara went on to win all three A-mains on his way to the highest step on the podium.

TOURING CAR WORLD CHAMPIONSHIP WARM-UP RESULTS

1. Hara (Japan)—HPI—Team Orion
2. Surikarn (Thailand)—Tamiya, Reedy
3. Hirotsuka (Japan)—Yokomo, Reedy
4. Adachi (Japan)—Yokomo, Reedy
5. Tosolini (USA)—Yokomo, Fantom
6. Groskamp (Holland)—XRAY, Peak
7. Kitazawa (Japan)—Yokomo, Reedy
8. Kauppinen (Finland)—XRAY, LRP
9. Spashett (UK)—Losi, Trinity
10. Jansen (Holland)—HPI, Team Orion

SITE SEEING



www.team-orion.ch

In addition to an all-around site redesign, Orion's home on the Web now features a truck HPI Micro RS4 racing game. The Micros can be equipped with hop-up parts to alter their performance; the track layout is altered every month; and there are plans for \$1,000 payout in an organized online race series! And it's all free! Orion was still testing the software at press time, but the game should be live now.

RUMOR MILL

- **HARDCORE GOES BIG** The guys at Hardcore Racing Components may soon be outfitting full-scale Euro hot rods with luxe titanium and aluminum parts.
- **MORE NASCAR** Our SoCal source has reported seeing 190mm Chevy Monte Carlo and Ford Taurus bodies from Team Losi; they will join Losi's already available Intrepid shell.
- **GOT A GOOD ONE?** If you've got a rumor to share, email it to rumormill@airage.com.

SPEED SHOP



TRINITY Nitro Fuel Cooler

It isn't easy to keep your fuel cool on a hot day at the track. You can put it under your table or in your pit box, but it will probably warm up. Trinity's Fuel Cooler will help keep its temperature down so that you can be sure of optimum performance. Shown here: Quart Cooler bag; use it to store metal and plastic fuel containers in quart and 1 gallon sizes. The pack is made of vinyl, it includes a Cooler gel pack and is closed by a top drawstring. Simply put the gel pack in the freezer on the night before a race, and put the pack in the Cooler bag to keep your fuel cool. The bag has a convenient carrying handle and sports the Trinity Nitro Power logo.

Quart Fuel Cooler—8124; \$17.99.



OFNA Picco .21 0-1BP engine

The 0-1BP is the newest addition to the OFNA Picco line-up. It features ABC construction, SG-style crankshaft, dual-needle slide carburetor, black-coated crankcase, rear-mounted boost chamber and a large, blue-anodized heat-sink head for maximum cooling. The engine has a claimed horsepower output of 2.7hp at 35,000rpm.

item no. 51217; \$413.99.

OFNA Racing (949) 586-2910; ofna.com.



TMS Heavy-duty 2-speed gears for HPI RS4

A blown gear can ruin your day. RS4 owners who run the stock 2-speed tranny are in luck. TMS has released a steel-gear-set upgrade that can be bolted directly onto the RS4's tranny with only about 30 minutes of wrenching time. The set includes two precision-machined gears that replace the 41- and 44-tooth gears. They are a little heavier than the stock units, but they will last forever.

RS4 steel gears for 2-speed tranny—TMS2SG; \$60.

TMS Inc. (401) 333-9430; racingtms.com.



NITRO BLAST X-1 Diff and Gear grease

Nitro Blast's new X-1 diff and gear grease is formulated to work in ball diffs, gear diffs and other drive-train applications. It's an extra-sticky blend containing a friction-reducing additive to quiet noisy drive systems and stick to the gears under acceleration. Because it's stickier, the grease lengthens

the time between rebuilds and makes your gears last longer. It comes in a compact 0.25-ounce container.

X-1 Grease—30001; \$4.95;

Nitro Blast (800) 891-1188; nitroblast.com.

QUICK PIT Fuel Gun

If you're the type of racer who looks for every advantage to get you over the line first, here is yet another way to save valuable seconds on the track. The Quick Pit

Fuel Gun is a filler bottle with a handle and a trigger. Simply stick the spout into the tank and pull the trigger; the fuel pours out in less than 1.5 seconds and you're on your way. The gun can hold up to 135cc of fuel, so it works well for 1/10-scale 75cc tanks and 1/8-scale 125cc tanks.

HOT-1288; \$25.99.

General Silicones Co. USA Inc.
(626) 338-3815;
gsweb.com.tw.



SPEED SHOP

XTM

.21 Pro Racing buggy engine

Check out XTM's new .21 6-port powerplant for 1/8-scale buggy competition. The Pro features a large, blue-anodized, heat-sink head for maximum cooling, a button for standard glow plugs, and a black-coated engine case that gives the engine a really cool custom look. The 2-needle slide carb type allows low- and high-end mixture adjustments. XTM claims the power and torque of this particular engine is maximized for off-road surfaces and typical buggy gearing. The Pro boasts a claimed top rpm of 34,000 and a power output of 2.4hp.

.21 Pro racing engine—32275; \$189.99.



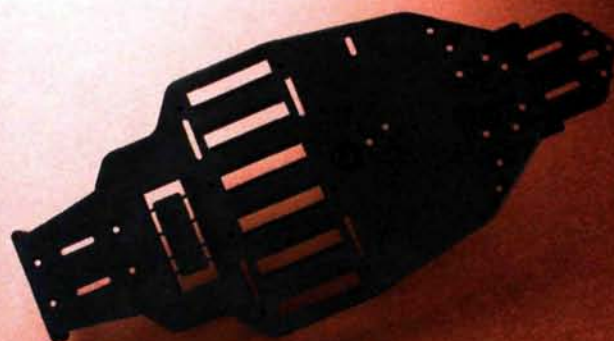
TAMIYA

TA04 lightweight carbon lower deck

Carbon-reinforced parts are a popular upgrade for race vehicles. If you want to race your TA04 in the TCS Series or a parking-lot race or any other event, gain an advantage with Tamiya's lighter, carbon-reinforced chassis. The chassis is a direct replacement that can be bolted in without any modifications to your existing platform. Tamiya even supplies all the screws you need to install the chassis, and there's an instruction sheet to show you how to install it easily and quickly.

TA04 carbon lower deck—53494; \$34.99.

Tamiya America (800) 826-4922; tamiyausa.com.



CORALLY

Mounted sedan foam tires

Using foam tires offers the easiest way to get your sedan hooked up with very little effort, as they're known to grip prepared asphalt and carpet extremely well. Corally has released 26mm foam tires in three compounds mounted on white, 6-spoke wheels. The tires are available in Purple Dot, Double Purple Dot and Plaid Dot compounds.

Item nos. 14451 (Purple Dot), 14452 (Double Purple), 14453 (Plaid); \$20.

Corally USA; distributed by Specialized RC Intl. (407) 681-5905; corallyusa.com.



LAST LAP

What do you like to do for fun between qualifiers?
You know: the stuff you do instead of working on your car!

Time between qualifiers? There is no time! I race two cars, and it's a full-time job. As soon as one car has finished, it's time to race the other. When I have time, I study other pro racers' lines to improve my driving.
Carl Madsen

I go talk to all the friends I race with. I also look at the cool stuff that the hobby shop has so that I can spend all my money. Then I sit at my pit and watch the racing and drink pop and eat chips.
Marko Meglen

I run to the ATM that's right next to the track for money to buy all the parts I broke.
John Ricardi

I like to watch the ceiling fans spin. I also search the floor under the pit tables for lost body clips.
Geoff Gurr

Get to know the trophy girls!
Wilfredo Raguro

NEXT MONTH'S QUESTION

Who do you think will win the IFMAR On-Road and Off-Road Worlds, and why do those drivers have the edge?

Respond by clicking "Last Lap" at www.rccaraction.com.

UNDER THE HOOD

Alex Lopez Schumacher Mission Pro

ROAR CARPET NATS SETUP

EQUIPMENT USED

Radio system: Airtronics M8

Receiver: LRP Phazer

Steering servo: KO Propo PDS-

2143 FET

Battery: Kinetix Stock Metal Hydride

ESC: Keyence Zero V Extreme

Motor: Putnam Propulsion

Gearing: 34/118

Tires (F/R): Take Off CS27 Spec

Body: Protoform Stratus

SETUP

	FRONT	REAR
Caster/anti-squat	0°	0°
Camber	-1.5°	-1.5°
Toe	0°	3°
Ride height	5mm	5mm
Swaybars	Stock	Stock
Shock length	66mm	66mm
Shock fluid	45WT	45WT
Shock pistons	3-hole	3-hole
Springs	Red (20 lb.)	Blue (15 lb.)
Droop	3mm	3mm
Shock location (upper/lower)	2/1	2/1
Camber-rod location (hub/bulkhead)	1/1	1/1

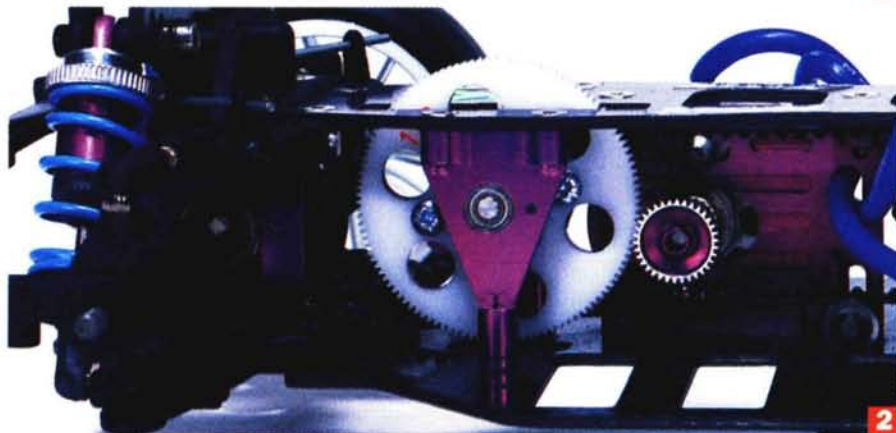
FACTORY OPTIONS

- Aluminum diff housings—item no. U2462 (pair)
- Aluminum Y-blocks—U2463
- Graphite chassis (stock on Pro car)—U2441 (upper), U2440 (lower)

- Aluminum spur-gear adapter—U2252
- One-way pulley—U2469
- Steel drive shafts—U2151
- Threaded shock bodies (4)—U2297

MODIFICATIONS

- My only real mod was to the hub carriers; I use the outside hole, and to gain camber-rod clearance, I shaved the extension on the hub where the inside hole is.



1. Hex fasteners replace the standard Posi screws throughout, and Schumacher's optional threaded shock bodies offer precise preload adjustments.

2. Alex uses RW spur gears (distributed by Schumacher) and aluminum Y-blocks in his Mission.

3. Alex uses the outer holes on the hub carriers, and he shaved the inner hole for camber-link clearance.



Alex's Mission arrived totally pristine—this thing is mint. Note that he runs his Keyence ESC with a stick-on heatsink (the faceplate that normally goes on top of the ESC is now on the front bumper), and uses all-blue wiring—stylish, but don't get distracted when soldering your pack back in!



FACTORY DRIVER HOT MOD

Instead of using a big hunk of servo tape with the backing left on to prevent solder drips from melting the cells' shrink-wrap, Alex uses a thin piece of adhesive foam for a neater look. Note that the foam is wrapped around the end of the cell so that if a crash presses the bar against the cell's rim, it won't cut the shrink-wrap and short the cell.

5 QUESTIONS



DRIVER: Alex Lopez

AGE: 17

SPONSORS: Schumacher, Speedmerchant, Kinetix, Putnam Propulsion, Keyence, Take Off, Team Cypress

WHEN I'M NOT RACING, I: hang out with my friends, get into trouble—the usual 17-year-old-kid things.

RC CAR ACTION: You've been driving the Schumacher Mission for a while now. Waddaya think?

AL: It's the best—not just because I run for Schumacher, but because it's consistent from lap to lap. It doesn't matter whether the track temperature is 160 degrees or cold, or carpet, or whatever. If you're a slacker and don't like wrenching, it's a simple car to work on, and just about any setup will work.

RCCA: You're still a relatively new face in racing. How long have you been at it?

AL: I've been racing for about four years. I've had a lot of help from Paul Wynn, and I've been privileged to race with the factory team drivers here in Florida.

RCCA: Your Mission looks good. Did you paint the body yourself?

AL: A friend of mine who does Paul Wynn's and Jared Scott's bodies did it for me. That's his decal on the wing—Winning Edge Designs.

RCCA: You're known as an on-road driver. Have you ever tried off-road?

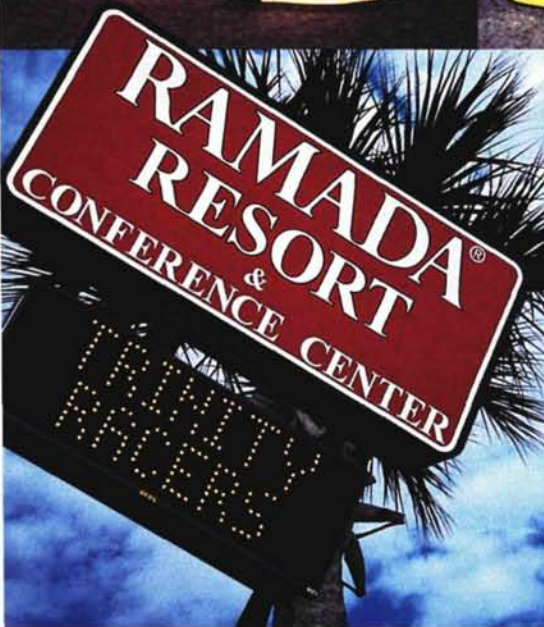
AL: Actually, I started in RC with an off-road car—a Traxxas Sledgehammer. I've always wanted to give off-road racing a shot—like in truck or 2WD stock. Maybe I'll give it a try.

RCCA: What's your goal in RC right now?

AL: I want to be a national champion or a Reedy Race champ. I want to win a prestigious title.

RCCA: Soldering questions. You've used a long time to learn your craft. What advice do you give to a kid who is just starting out in racing and learning the basics of soldering?

AL: Don't try to fix up to others' mistakes. If you want to be a pro, there's no shortcuts. You have to learn the basics. The only thing you can do is get your hands dirty and your mind into it.



Protoform's Dale Epp shows off his new Monte Carlo shells. Brian Chudy threw the paint. Nice.

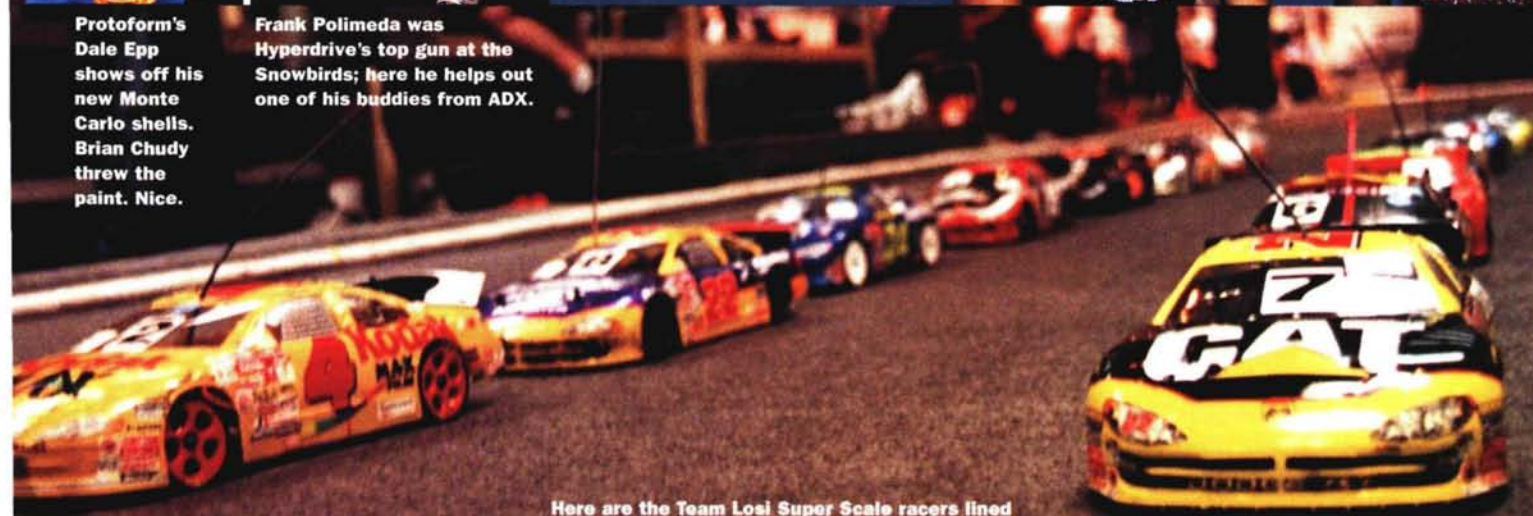
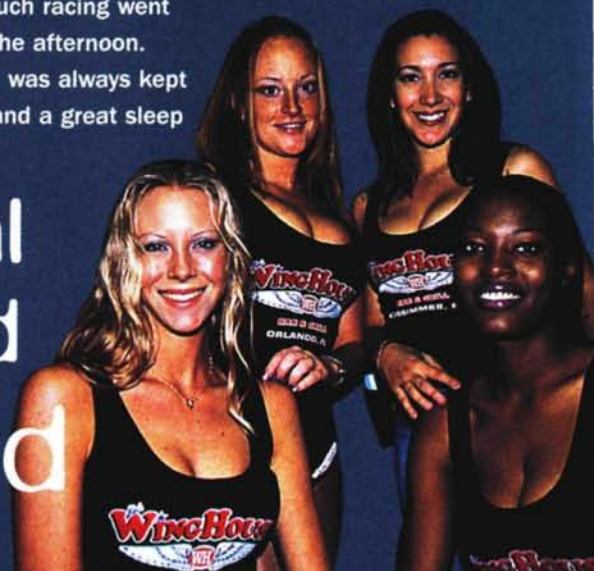
Frank Polimeda was Hyperdrive's top gun at the Snowbirds; here he helps out one of his buddies from ADX.

Mike Boylan's Snow

You don't see oval and on-road guys together too often, but each year in Orlando, they come together just fine. The occasion? Mike Boylan's Snowbirds Nationals, now in its second year at the Ramada Inn but celebrating its eighth anniversary as an annual event. The Snowbirds used to be an oval-only race at the now defunct Thunder Raceway, but when Mike moved the action to the Ramada, he decided to have classes for just about anything that goes fast on a carpet, short of vacuum cleaners. The result is one hugely popular race (more than 400 attendees, with over 600 race entries), and nonstop around-the-clock action. Literally around the clock; as much racing went on at 3 a.m. as at 3 o'clock in the afternoon. Time became irrelevant, but fun was always kept in focus. All had a good time—and a great sleep when it was all over!

by Peter Vieira

Oval
meets
On-Road
at the
Hot Rod
Hotel



Here are the Team Losi Super Scale racers lined up for concourse judging. Les Moscarillo's CAT Dodge Intrepid (right) got the trophy.



Bird Nationals

Sponsored by **Trinity**
& Radio Control Car Action



Big John Zuback was selling his Speed Juice and having a good ol' time at The Bird. Can you guess why they call him "Big John"?

Still into it after all these years ... Brian Kinwald and Richard Trujillo take in some action trackside.

Left: Mario and Juraj Hudy get ready for another round with their XRAY cars.



Fantom's Troy Schroeder and Jared Scott get ready to fire up the Honda Z50 they trucked in for between-race hell-raising. Jared had second-gear wheelies dialed.

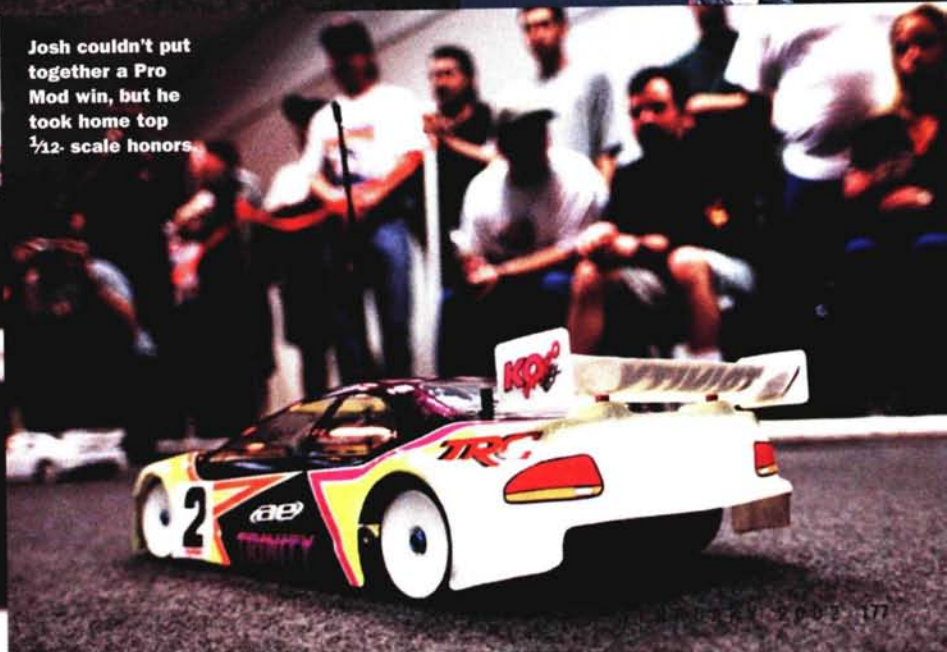


Trinity's Paul Lemieux piloted his Team Losi machine to Touring Pro Mod victory.



PHOTOS BY PETER VIEIRA

Josh couldn't put together a Pro Mod win, but he took home top 1/12-scale honors.



MAIN EVENT ACTION ON-ROAD

Touring Stock

■ Handout motor ■ Rubber tires ■ 5 minutes

Top Qualifier: Scotty Ernst

Ron Atomic won the first qualifier with his Schumacher Mission, but Scotty snagged the second and third to TQ. In the Main, the top three sorted out very quickly as Scotty drove his Reedy-powered Associated TC3 from tone to tone without ever giving up the lead. Brian Lutz and Bryon Schumate, also driving TC3s, settled into second and third after the first seven laps, and that's how they finished.

Touring 19-turn Mod Rubber

■ Trinity Chameleon 2 motor ■ Rubber tires ■ 5 minutes

Top Qualifier: Ron Atomic

Ron Atomic made his TQ pace stick for the Main, and his Kinetix-equipped Schumacher Mission never left the pole. The real action was trailing Ron's bumper; sixth-place qualifier Keith Manton patiently made all the right moves to put his Trinity-powered Losi Triple-XS into second, while Brian Lutz worked hard to turn around a bad-luck start into a third-place finish for his TC3.

Touring 19-turn Mod Foam

■ Trinity Chameleon 2 motor ■ Foam tires ■ 5 minutes

Top Qualifier: Ralph Burch

It looked as though the foam-tire Chameleon class would be another no-looking-back win for the TQ, but Ralph Burch couldn't keep his XRAY T1 in the top spot. On lap 19, Ralph biffed and moved back to third, allowing Jared Scott to move his Associated TC3 into first under SMC power. Interestingly, the foam-tire Chameleon cars were just a tick over 1mph faster than the rubber-tire machines.

Touring Pro Mod

■ Foam tires ■ 4 minutes

Top Qualifier: Paul Lemieux

Pepe pulled out his best stuff, winning two qualifiers to take TQ. At Main time, Paul put together a 23-lap run to bring in the win for Trinity and Team Losi, while teammates Brian Kinwald (The Carpetnator?) and David Spashett rolled in behind him. Josh Cyrul held second place for most of the race but didn't get a shot at the win; he broke on lap 19.

1/12 GTP Stock

■ Handout motor ■ 4-cell ■ 8 minutes

Top Qualifier: TJ Bradley

Second-place qualifier Paul Ciccarello led the first half of the Main with his SMC-powered Speedmerchant, as TJ recovered from a start-tone bobble with his own Speedmerchant/SMC machine. At last, TJ put together a pass and led the final half of the race, with Ciccarello in tow. Alexander Lopez also wheeled a Speedmerchant and took third, but he didn't carry SMC cells; Alex ran a Kinetix pack.

1/12 GTP Modified

■ Open mod motor ■ 4-cell ■ 8 minutes

Top Qualifier: Mike Blackstock

Josh Cyrul and his Trinity Switchblade appeared to have a lock on the Main,



If you wanted to spot someone working their butt off at the 'Bird, all you had to do was look for a blue shirt. These are the guys who made it happen (clockwise from top left): Paul Patterson, Bill Spicer, Jim Fuller, Ken Holmes, Paul Schaub, Mike Boylan, and John Moulie. Not pictured, but much appreciated, are Dave Fox, Mel McCoy, Sam Ledford and the saintly Julie Boylan.

despite Mike Blackstock's impressive TQ run, but it wasn't meant to be. Josh led for 40 laps and then cooked a cell with less than 1 minute to go, and all he could do was block and hope to hang on until the tone. It wasn't enough, and Mike's Associated/Reedy ride cruised past for the win, with fellow A-Team driver Jon Orr in tow.

Legends

■ Handout motor and battery ■ 4-cell ■ 5 minutes

Top Qualifier: Mark Johnson

Cheating marred the fun in the Legends class; too bad for the honest guys who came to race clean. Mark Johnson took a clean TQ, was cheated out of the A-main win, then was handed the victory when the winning car came up dirty in tech. C'mon guys, it's Legends! If you wanna cheat, race mod.

OVAL

4-cell Stock

■ Handout stock motor ■ 4 minutes

Top Qualifier: Mike Ulbrik

After a few sorting-out maneuvers in the opening laps, the top three qualifiers finished 1-2-3 in 4-cell. Winner Mike Ulbrik ran Hurricane power in an unspecified chassis, while Danny Bartholomew and Steve Salvas packed Pole Position power in their Hyperdrive machines.

6-cell Stock

■ Handout stock motor ■ 4 minutes

Top Qualifier: Phil Marabella

Fast Phil did Trinity proud by blowing out a tone-to-tone victory run with his Switchblade SS, backing up a blistering TQ pace. Kevin Koback used Pole Position power to finish second after battling back from seventh with his Hyperdrive machine, and Billy Bruce picked up third.

19-turn Modified

■ Trinity Chameleon 2 motor ■ 4-cell ■ 4 minutes

Top Qualifier: John Foister

This was the first win of the weekend for RaceTech oval ace Brian Burkhardt, who drained a pack of SMC cells to take the win away from leader Mike Ulbrik who bowed out at lap 26. Not that Brian had it easy; he had to beat TQ John Foister's Hyperdrive and Tony Fox's Leading Edge on the way to the finish, all running SMC cells.

HOW TO WIN the Snowbirds

ON-ROAD

Three rounds of IFMAR-style (race against the clock, individual starts) qualifying for each on-road class determined the seeding for the Main. That's right, "Main," as in one race for all the marbles.

The Touring Stock, Touring 19-turn and Legends guys ran 5-minute heats; Touring Pro Mod ran 4 minutes, and the 1/12-scale cars ran 8-minute heats.

OVAL

The Snowbirds traditionally runs a round of single-lap qualifying to seed the grid for the qualifying heats, but this was eliminated due to time constraints (bummer; it was fun to watch). Like the on-roaders, the oval guys ran three qualifiers for position in an all-the-marbles Main. Unlike the on-road guys, the LTO drivers raced heads up in the quals—IFMAR, schmifmar.

4-cell Pro Mod

■ Open mod motor ■ 4 minutes

Top Qualifier: Daryl Silva

Daryl had a tough start and never saw first place after the start tone. Brian Burkhart, meanwhile, laser-targeted the finish line and saw only clear track ahead of his RaceTech/SMC ride after the third lap. Trinity's Josh Cyrul was one of the guys Brian edged out in those three opening laps, but Josh held onto his second-place qualifying position. Josh could have won any of the classes he raced in, but he just didn't have his lucky stuff in Orlando.

6-cell Pro Mod

■ Open mod motor ■ 4 minutes

Top Qualifier: Josh Cyrul

This looked to be Josh's race to win, as he was the only driver to post a 60-lap run (hence the TQ), but it just wasn't Josh's weekend. He drove the wheels off his Switchblade SS, but he couldn't get around Sean Cochrane's Associated for the first half of the race. By the time Josh did get around, it was too late to stop Frank Polimeda's SMC-powered Hyperdrive. The LTO legend never gave up the lead after lap 15.

1/12 Stock

■ Handout stock motor ■ 5 minutes ■ 4-cell

Top Qualifier: Ted Flack

It was a little-car freight train in 12-stock, as Tom Postalwait's SMC-equipped CRC Razor spent one lap in third and the other 56 in first. TQ Ted Flack and his Wood racer settled for second, and Bruce Triplett put his Hyperdrive into third, with no position changes in 56 laps.

OVAL WINNERS

4 CELL STOCK OVAL

FIN.	QUAL.	DRIVER	CHASSIS	MOTOR	BATTERY	ESC	RADIO	TIRES	BODY	RATIO
1	1	Mike Ulbrik	INS	Handout	Hurricane	LRP Quantum	JR Racing	TM	Protoform Intrepid	INS
2	2	Danny Bartholomew	Hyperdrive Adrenaline	Handout	Pole Position	Novak Cyclone	Futaba 3PJ	BSR	Protoform Intrepid	42/120
3	3	Steve Salvas	Hyperdrive	Handout	Pole Position	Novak Cyclone	KO Propo EX-11	BSR	Protoform Pontiac HD	43/124
4	5	Corey Heft	Hyperdrive Adrenaline	Handout	Pole Position	GM	Airtronics M8	BSR	Protoform Intrepid	39/116
5	4	Derrick Robbins	RaceTech G-Force	Handout	Pole Position	Tekin G9	Futaba 3PJS	TRC	Protoform Monte Carlo	INS

6-CELL STOCK OVAL

1	1	Phil Marabella	Trinity Switchblade	Handout	Trinity Stock Metal	Novak	Futaba	TRC	Protoform Pontiac	32/120
2	4	Kevin Koback	Hyperdrive Adrenaline	Handout	Pole Position HV	Tekin G9	Futaba 3PJS	BSR	Protoform Intrepid	33/120
3	7	Billy Bruce	INS	Handout	INS	INS	Airtronics M8	INS	INS	INS
4	5	Stevie "Rocket" Miller	ADX Prototype	Handout	SMC Sanyo HV	GM V12 Worlds	Futaba PCM	Jaco	Protoform 2000 Grand Prix	32/116
5	8	Tony Padilla	Associated RC10L30	Handout	Power Push	Novak Cyclone	Airtronics M8	TRC	Protoform Pontiac	28/115

4-CELL 1ST OVAL

1	2	Brian Burkhart	RaceTech	Putnam	SMC Sanyo HV	Keyence	Airtronics M8	Jaco	Protoform Monte Carlo HD	INS
2	5	Tony Fox	Leading Edge	Trinity	SMC Sanyo HV	LRP	Futaba	INS	Bolink Monte Carlo	38/117
3	1	John Foister	Hyperdrive S10	Trinity	SMC Sanyo HV	LRP	Futaba	BSR	Bolink Monte HD	40/124
4	4	Steve Salvas	Hyperdrive S10	Putnam Pro	Pole Position	Novak Cyclone	KO Propo EX-11	BSR	Protoform Pontiac HD 2001	42/124
5	7	Roger Douglas	Hyperdrive	EA M'Sports	SMC Sanyo HV	Novak	Futaba 3PJ	BSR	Bolink Monte HD 2001	40/120

4-CELL PRO MOD

1	3	Brian Burkhart	RaceTech	Putnam Pro	SMC Sanyo HV	Keyence	Airtronics M8	Jaco	Protoform Monte HD	INS
2	2	Josh Cyrul	Trinity SB10SS	Trinity P-94	Trinity Stock Metal	LRP Quantum	KO Propo Mars	TRC	Bolink Monte Carlo	26/124
3	5	Richie King	Hyperdrive Adrenaline	Mighty Motors	Pole Position	Novak	Futaba 3PJ	BSR	Bolink Pontiac '97	33/120
4	1	Daryl Silva	Associated L30FT	Reedy Ti	Reedy Extreme	LRP Quantum	JR Racing R-1	Jaco	Protoform Monte Carlo HD	29/120
5	8	Walter Henderson	Associated RC10L3	Reedy Ti	Reedy Stock Metal	LRP Quantum	Airtronics M8	Jaco	Protoform Monte Carlo HD '02	27/111

6-CELL PRO MOD

1	3	Frank Polimeda	Hyperdrive	Putnam Pro	SMC Sanyo HV	Novak	Futaba	Jaco	Protoform	INS
2	1	Josh Cyrul	Trinity SB10SS	Trinity P-94	Trinity Stock Metal	LRP Quantum	KO Propo Mars	TRC	Bolink Monte Carlo	22/124
3	7	Jason Lambert	Trinity Switchblade 2	Trinity P-94	Trinity Stock Metal	LRP Quantum	Futaba 3PJ	TRC	Protoform Dodge Intrepid	23/124
4	5	Brian Burkhart	RaceTech	Putnam	SMC Sanyo HV	Keyence	Airtronics M8	Jaco	Protoform Monte Carlo HD	INS
5	6	Arnie Fie	Trinity Switchblade 2	Trinity P-94	Trinity Stock Metal	LRP Quantum	Futaba 3PJ	TRC	Protoform Pontiac HD	22/128

1/12 STOCK OVAL

1	4	Tom Postalwait	CRC Razor	Handout	SMC Sanyo HV	LRP	Futaba	Jaco	Protoform	38/100
2	1	Ted Flack	Wood Racing	Handout	Power Push	LRP	Airtronics M8	Jaco	Protoform	INS
3	2	Bruce Triplett	Hyperdrive SSE	Handout	Pole Position	Novak Atom	Futaba	BSR	Protoform Taurus	38/96
4	6	Kyle Majikas	Associated RC12L30	Handout	Sanyo HV	GM	Futaba	BSR	Protoform Taurus	37/88
5	5	Charles Yates	RaceTech	Handout	SMC Sanyo HV	GM V-12	KO Propo Mars	Jaco	Bolink	INS

1/12 MOD OVAL

1	1	Josh Cyrul	Trinity SB12SS	Trinity P-94	Trinity Stock Metal	LRP Quantum	KO Propo Mars	TRC	Bolink Monte Carlo	27/104
2	8	Frank Polimeda	Hyperdrive	Putnam Pro	SMC Sanyo HV	LRP	Futaba	Jaco	Protoform	INS
3	6	Duane Silva	Associated RC10L30	Reedy Ti	Reedy Extreme	LRP	INS	INS	Protoform	INS
4	3	Mike Murphy	Hyperdrive	Putnam Pro	SMC Sanyo HV	GM V-12	Futaba 3PJ	Jaco	Protoform Taurus	INS
5	2	John Foister	Hyperdrive	Mighty Motors	SMC Sanyo HV	LRP	Futaba	BSR	Bolink Monte Carlo HD	30/100

TEAM LOSI SUPER STOCK

1	6	Jim Meyers	Losi Triple-XS	Handout	Orion Sanyo HV	Keyence	Airtronics M8	Take-Off	Losi Intrepid	29/90
2	2	Brian G. Smith	Associated TC3	Handout	SMC Sanyo HV	Novak Atom	Futaba 3PD	Sorex	Losi Dodge NASCAR	40/94
3	1	Tony Padilla	Schumacher Axis	Handout	Power Push	Novak Cyclone	Airtronics M8	Pit Shimuzu	Losi Intrepid	36/112
4	4	Gary Owen	Associated TC3	Handout	Reedy Extreme	LRP	INS	INS	INS	INS
5	5	Scott Meeks	Associated TC3	Handout	Pro Match	Novak	Futaba 3PDF	Pit Shimuzu	Losi	INS

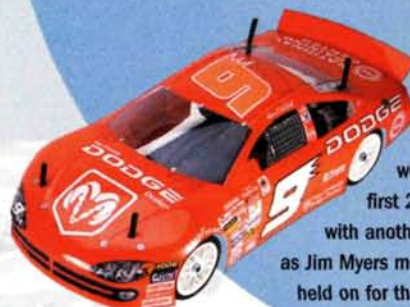
INS=Information not supplied by driver.

All-Wheel-Drive OVAL

The Snowbirds bucked convention by opening up the oval to touring cars—with a little help from Team Losi.

Offered as an exhibition event, the Team Losi

Super Scale Stock class brought electric sedans into the LTO universe. The class was open to all 4WD touring cars and required each entrant to use rubber tires (good move) and a Team Losi Super Scale NASCAR body. Losi even tossed in free bodies for the first 20 entrants—pretty cool.



Gary Owen, Associated's inside sales guy, dominated qualifying with his TC3 (would he drive anything else?); he was the only driver who broke the 43-lap barrier. Gary went on to lead the A-main for the first 29 laps of the race, but he tangled with another car and dropped back to fourth, as Jim Myers moved to the front of the pack and held on for the win. It sure looked like they were having fun; let's hope that the class will return next year.

1/12 Mod

■ Open mod motor

■ 5 minutes ■ 4-cell

Top Qualifier: Josh Cyrul

Oval's biggest names and smallest cars railed around the flat track at nearly 30mph with some of the cleanest driving of the weekend. TQ Josh Cyrul was in the crosshairs of Frank Polimeda's Hyperdrive and Duane Silva's Associated every second of the race, but the Trinity driver opened up a nearly 2-second gap that couldn't be bridged. At the finish tone, Josh and his Switchblade 12SS posted 67 laps to take the win.

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ON-ROAD WINNERS

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TOURING STOCK

FIN.	QUAL.	DRIVER	CHASSIS	MOTOR	BATTERY	ESC	RADIO	TIRES	BODY	RATIO
1	1	Scotty Ernst	Associated TC3	Handout	Reedy Extreme	Novak TC2	Airtronics M8	Sorex	Protoform Stratus	26/72
2	4	Brian Lutz	Associated TC3	Handout	Pro Match	LRP	Airtronics M8	Sorex	Protoform Stratus	27/76
3	3	Bryon Schumate	Associated TC3	Handout	Trinity Stock Metal	LRP Quantum	Airtronics M8	Sorex	Protoform	23/72
4	5	Bryan Brousseau	Associated TC3	Handout	Pole Position	Novak TC2	Futaba Magnum	INS	Protoform	INS
5	2	Ron Atomic	Schumacher Mission	Handout	Kinetix Stock Metal	Keyence	Airtronics M8	Sorex	Hot Bodies Stratus	30/114

TOURING 1ST RUBBER TIRE

1	1	Ron Atomic	Schumacher Mission	INS	Kinetix Stock Metal	Keyence	Airtronics	INS	Hot Bodies	INS
2	6	Keith Manton	Losi Triple-XS	Trinity	Trinity Stock Metal	Novak	JR Racing R-1	Sorex	Stratus	INS
3	2	Brian Lutz	Associated TC3	Chameleon 2	Pro Match	LRP 7.1	Airtronics M8	Sorex	Protoform Stratus	23/74
4	5	Timmy Heiser	Schumacher Mission	Chameleon 2	Reedy Extreme	Novak TC2	KO Propo	Sorex	Protoform Stratus	23/92
5	9	Bryan Brousseau	Associated TC3	Trinity	Pole Position	Novak TC2	Futaba Magnum	Take Off	Protoform Stratus	26/72

TOURING 1ST FOAM TIRE

1	7	Jared Scott	Associated TC3	Fantom	SMC Sanyo HV	LRP Quantum	Airtronics M8	Jaco	Protoform Stratus	26/72
2	5	Brian Jucha	Schumacher Mission	Fantom	SMC Sanyo HV	Novak TC2	Airtronics M8	Jaco	Protoform Stratus	27/95
3	1	Ralph Burch	XRAY T1	Chameleon 2	Trinity	LRP 7.1	KO Propo Mars	TRC	Protoform Stratus	30/93
4	4	Paul Wynn	Schumacher Mission	Chameleon	Reedy Extreme	Keyence	Airtronics M8	Jaco	Protoform Stratus	27/95
5	9	Teemu Leino	Schumacher Mission	Trinity	Orion Sanyo HV	LRP	Sanwa M8	Jaco	Protoform Stratus	27/95

TOURING PRO MOD

1	1	Paul Lemieux	Losi Triple-XS	Trinity P-94	Trinity Stock Metal	LRP Quantum	INS	TRC	Trinity Stratus	20/128
2	3	Brian Kinwald	Losi Triple-XS	Trinity P-94	Trinity Stock Metal	Novak TC2	Airtronics M8	TRC	Trinity Stratus	INS
3	4	David Spashett	Losi Triple-XS	Trinity P-94	Trinity Stock Metal	LRP	KO Vantage	TRC	Trinity Stratus	26/128
4	6	Billy Easton	Associated TC3	Reedy Ti	Reedy Zappers	LRP Quantum	Airtronics M8	Jaco	Protoform Stratus	25/104
5	7	Todd Hodge	Losi Triple-XS	Trinity P-94	Trinity Stock Metal	Novak TC2	JR Racing R-1	TRC	Trinity Stratus	26/128

1/12 GTP STOCK

1	1	TJ Bradley	Speedmerchant	Handout	SMC Sanyo HV	Novak	Airtronics M8	Jaco	Parma Bentley	33/100
2	2	Paul Ciccarello	Speedmerchant	Handout	SMC Sanyo HV	Novak	Airtronics M8	Jaco	Parma Bentley	33/100
3	9	Alexander Lopez	Speedmerchant	Handout	Kinetix Stock Metal	Keyence	Airtronics M8	Jaco	Parma Bentley	33/100
4	4	Bruce Carbone	Speedmerchant	Handout	SMC Sanyo HV	Novak	JR Racing 756	Jaco	Parma Bentley	31/100
5	0	Leon MacIntosh	Associated RC12L3	Handout	Reedy Extreme	LRP	Airtronics M8	Jaco	Protoform P-35	32/100

1/12 GTP MOD

1	1	Mike Blackstock	Associated 12L3	Reedy Ti	Reedy	Novak C2	KO Propo	Jaco	Parma	25/104
2	8	Jon Orr	Associated 12L3	Reedy	Reedy Zappers	LRP Quantum	KO Propo EX-1	Jaco	Parma	23/104
3	3	Josh Cyrul	Trinity Switchblade	Trinity P-94	Trinity Stock Metal	LRP Quantum	KO Propo Mars	TRC	Trinity	22/104
4	2	David Spashett	Trinity Switchblade	Trinity P-94	Trinity Stock Metal	LRP	KO Vantage	TRC	Trinity	22/104
5	5	Brian Kinwald	Trinity Switchblade	Trinity P-94	Trinity Stock Metal	Novak	Airtronics M8	TRC	Trinity	INS

INS=Information not supplied by driver.



Trinity's Paul Lemieux, Joel Johnson and Ernie Provetti have a laugh. They're probably cracking on the innovative white-fading-into-white paint job on Paul's car.

DON'T FORGET THESE GUYS!

Trinity and RC Car Action were the proud marquee sponsors of the Snowbirds, but more than just two companies contributed to its success. Here are the other companies that helped make the race happen, in alphabetical order:

Associated
Bolink
HobbyTown USA Indy Raceway
Hurricane Motorsports
HyperDrive
Jaco
Jake's Performance Hobbies
Kimbrough
Millennium RC
Minnreg RC Car Club
Nitech
Pro-Line
Pro Parts
Protoform
Putnam Propulsion
RaceTech
Schumacher
SMC
Superior Hobbies
Team Losi
XRAY
Zuback's Speed Juice

Race Rocked

Once again, Orlando's eye-popping, motorsports-theme Race Rock restaurant was the site of the Snowbirds wrap party. Promoter Mike Boylan handed out leather Race Rock jackets to the Pro



Mod winners and a check for \$500 to Frank Polimeda for his 6-Cell Pro Mod oval victory—the event's only money class. In keeping with the Snowbirds' newest tradition, Frank and the other winning drivers donated their cars' bodies for display in Race Rock's showcase; each year, the newest bodies replace the previous year's winners.



Downing some chicken wings or a big burger, surrounded by history-making hardware and the guys you raced with all weekend, was the perfect ending to a first-class event. Once again, Mike Boylan and his dedicated crew brought together on-road and oval for a fast-paced, action-packed marathon of RC competition and camaraderie. I'll be back next year! ■





Right: the narrow body barely covers the 2.5-inch-diameter, 1.5-inch-wide rear slicks mounted on narrowed Parma rear wheels. Koford slot-car traction goop used liberally ensures that the car hooks up to the track. The rear is entirely cut out to allow air to escape from under the body. Look closely, and you can see the arming switch for the "On-Stat" computer sensor. The "chrome" paint job is the new Alclad II lacquer along with Parma Faskolor fluorescent flames. All the lettering was done with a Roland Stika vinyl-cutting machine.

Steve Saik's Immortal Force funny car swept the 2001 IEDA Funny Car class championship and ran a career-best 1.71 against Charlie Stomm's dragster. Steve likes the Protoform '94 Firebird body because of its small frontal area, but he will switch to an all-new chassis and Protoform's new Camaro body next year. The Firebird's rear side dams are made of scrap Kydex, and unlike most competitors in the field, Steve runs very little rear kickup on the spoiler.

WORLD'S QUICKEST DRAGGERS

*The world's fastest nitro and electric dragsters face off
in the quickest race in history!*

by Mike Ogle

We hear a lot of trash talk about which reigns supreme in RC—nitro or electric. To settle the matter, two of the world's quickest RC dragsters, one nitro powered and one electric powered, squared off in a race at the International Electric Drag Racing Association (IEDA) World Finals in Clinton, NC. The result was the quickest—and one of the closest—side-by-side RC drag races in history. Here's the story.



DRIVER STEVE "SAIKO" SAIK
CAR IMMORTAL FORCE FUNNY CAR



WEIGHT 45 oz. (1,276g)
WHEELBASE 12.5 in. (318mm)
POWER SOURCE 10, 2000mAh cells
POWERPLANT Saiko Overkill by Immortal Force
CHASSIS FM Performance
BODY Protoform Firebird

ELAPSED TIME 1.713 sec.
SPEED 77.34mph
REACTION TIME 0.524 sec.
6-FOOT TIME 0.259 sec.
66-FOOT TIME 1.094 sec.

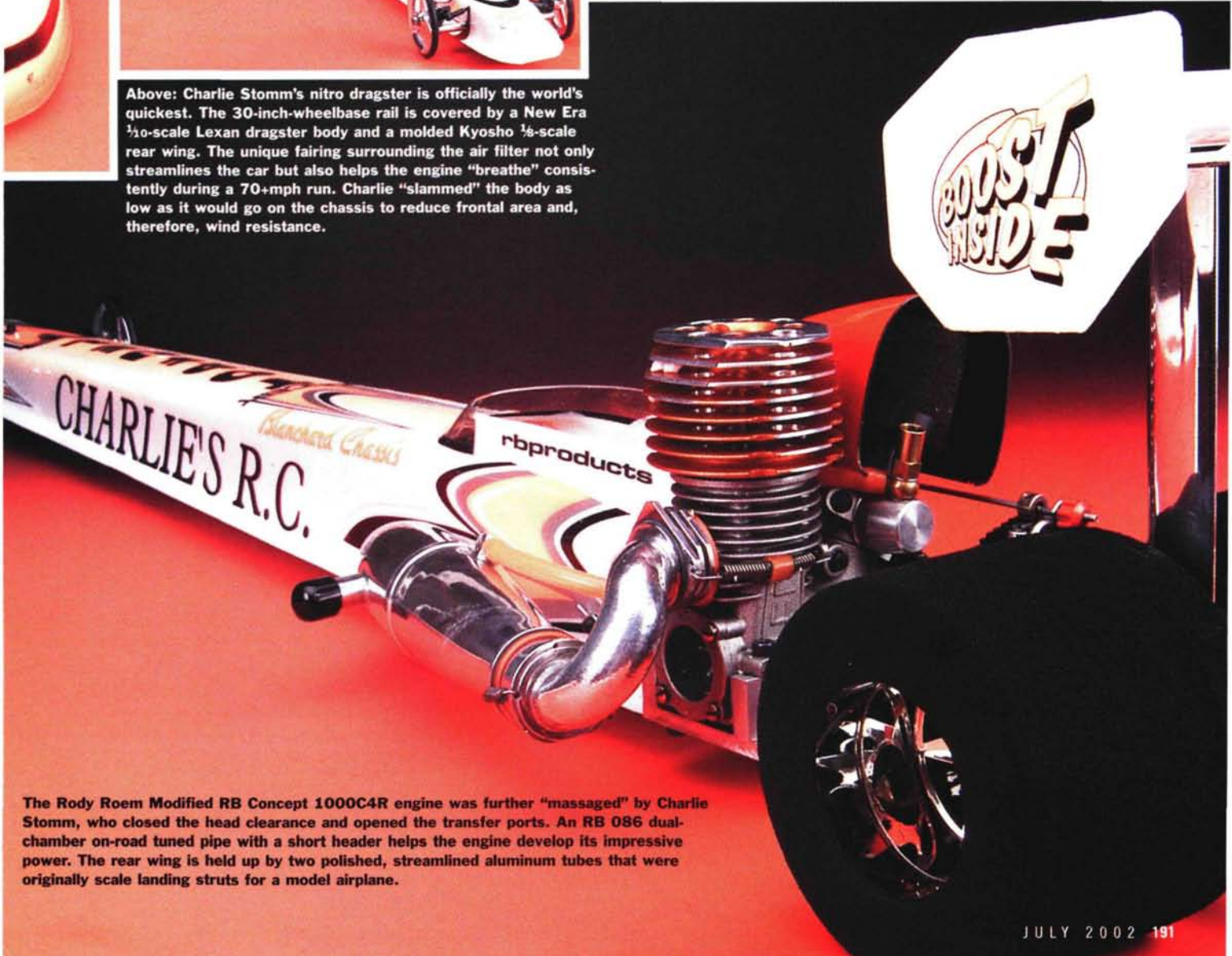


DRIVER CHARLIE STOMM
CAR CHARLIE'S RC DRAGSTER

WEIGHT 48 oz. (1,360g)
WHEELBASE 30 in. (762mm)
POWER SOURCE 40% nitro fuel
POWERPLANT 1000 C4R .21 by RB Concepts
CHASSIS Blanchard/Herndon
BODY New Era Models

ELAPSED TIME 1.719 sec.
SPEED 71.81mph
REACTION TIME 0.614 sec.
6-FOOT TIME 0.247 sec.
66-FOOT TIME 1.075 sec.

Above: Charlie Stomm's nitro dragster is officially the world's quickest. The 30-inch-wheelbase rail is covered by a New Era 1/10-scale Lexan dragster body and a molded Kyosho 1/8-scale rear wing. The unique fairing surrounding the air filter not only streamlines the car but also helps the engine "breathe" consistently during a 70+mph run. Charlie "slammed" the body as low as it would go on the chassis to reduce frontal area and, therefore, wind resistance.



The Roddy Roem Modified RB Concept 1000C4R engine was further "massaged" by Charlie Stomm, who closed the head clearance and opened the transfer ports. An RB 086 dual-chamber on-road tuned pipe with a short header helps the engine develop its impressive power. The rear wing is held up by two polished, streamlined aluminum tubes that were originally scale landing struts for a model airplane.

WORLD'S QUICKEST DRAGGERS



1. Editor's note: Mike Ogle is too modest to give himself credit for slinging the paint on Steve Saik's funny, so we'll do it for him.

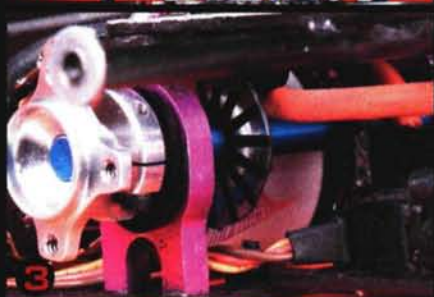
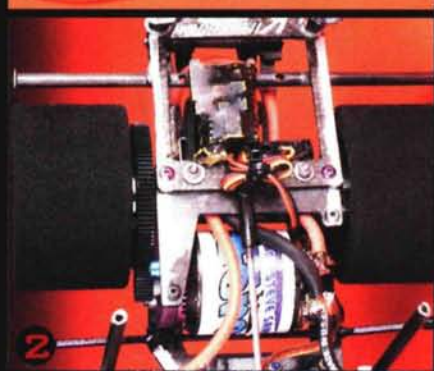
2. The top view of the rear pod shows the quad-magnet "Saiko Overkill" neodymium drag motor. Steve Saik has been making custom drag motors for a few years, but this 8-turn, machined-can version is by far his most powerful rendition yet. It was custom-wound by "Big Jim" Greenemeyer on a Reedy Ti armature blank, double-epoxied and Kevlar-wrapped to prevent the wires from flying off the commutator. Deans' 12-gauge Wet Noodle wire transfers the juice of 10, 2000 cells from Jeff Roe of Pro-Match Batteries. Also noteworthy are the body braces in front of and behind the rear slicks. These prevent the body from flapping or caving in at speeds of more than 70mph.

3. A close-up look at the Lexan "flywheel" used in the On-Stat system to sense the rear axle speed. Kevin Moore's On-Stat system records the axle speed and calculates the percentage of traction during the run (up to

the solid aluminum, blue rear axle.

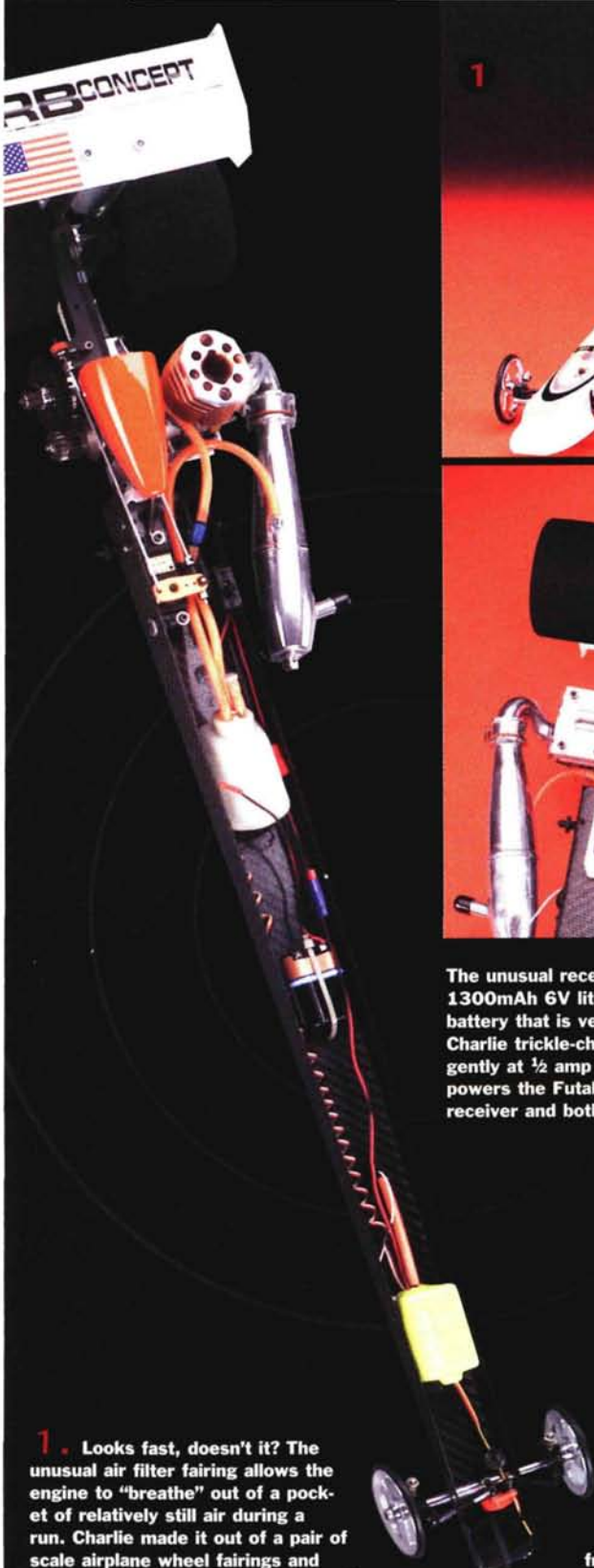
4. At the front is a light, hollow, on-road beam-style system from Lockmann Precision. A 4-cell receiver pack is used to slow the response time of the throttle and steering servos. The steering servo is a small Hitec HS-60, and the custom aluminum front wheels are new from Team Walbern. Notice the flat profile of the O-ring front tires—a handling secret, perhaps? Longtime on-road and oval racers may recognize the front

The main graphite chassis plate is from Frank Martorelli's FM Performance. Steve uses JR radio systems for control and has long endorsed Kimbrough's 48-pitch pinion and spur gears for their ability to stand up to the power of the car's brutally hard launches and equally abrupt stops. Also noteworthy are the multiple points of body mounting and body support—at least 11 points of contact from the chassis.



bumper as an old Lynx oval-car top brace. The little pad on top of the steering servo prevents the body's nose from caving in at speed.

5. Under the car's rear, you can see the handmade wheelie-bar system consisting of two small Delrin dragster front wheels from Lockmann Precision on a pair of graphite struts. In between nestles a small JR NES-241 microservo that activates a single 25A microswitch for instant go-power.



1. Looks fast, doesn't it? The unusual air filter fairing allows the engine to "breathe" out of a pocket of relatively still air during a run. Charlie made it out of a pair of scale airplane wheel fairings and immediately knocked $\frac{2}{100}$ second off his ET.

2. The brake system, bearing support and front 17-tooth pulley are all stock HPI RS4 items.

3. Charlie made the rear aluminum chassis section according to a design by Raymond Blanchard of Blanchard Chassis, Dallas, TX. He machined it out wherever he could to save precious ounces without losing strength. The 2-speed is from OFNA, and he uses 15/45 low-speed and 19/41 high-speed gearing.

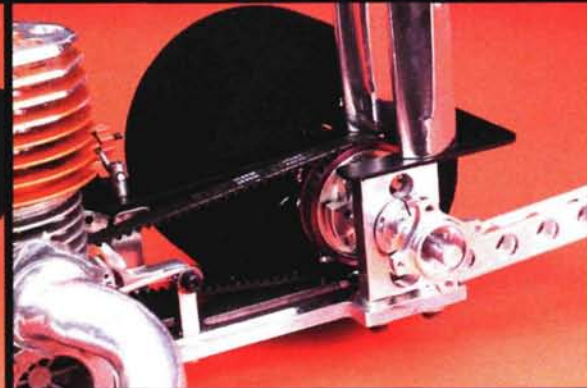
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2



The unusual receiver pack is a 1300mAh 6V lithium camera battery that is very light. Charlie trickle-charges it very gently at $\frac{1}{2}$ amp or less. It powers the Futaba 1024 PCM receiver and both servos.



4. The car runs two Robinson 10-L-style on-road clamp hubs on a solid aluminum axle. The 39-tooth rear drive pulley is also from Robinson. Very clean workmanship is evident throughout. The rear tires are 2- to 2.25-inch-wide, 3.33-inch-diameter drag foams mounted on Parma wheels. Note the handmade aluminum wheelie bar that's drilled out for weight savings and sports two ball bearings for wheels.

5. The Centax-style clutch is one of the reasons this car launches so hard. It's Swiss made and purchased through Sigma Trading. According to Charlie, it hits so hard that it almost snaps the drive belt. The 2-speed transmission is an OFNA component.

6



6. The spartan front end is a standard, beam-style on-road front end from New Era. If it looks as if there's a lot of caster here, you're right—48 degrees, to be exact. The cool 3-spoke front wheels are Dragmaster's, with neoprene O-rings for ultra-skinny front tires. Charlie uses one Hitec HS-80MG metal-gear servo for steering and a Futaba 9304 servo for the throttle.

HOW IT ALL WENT DOWN

It all started when the topic of nitro versus electric power regularly appeared online on IEDA's message boards. A particularly vocal group of nitro racers from Texas threw down a challenge: they would go head to head against any electric dragsters at the next IEDA meet. The best nitro elapsed time (ET) anyone (outside of Texas) had ever posted was approximately 1.80 seconds; IEDA's top electric dragsters regularly clocked mid-1.70-second runs (about $\frac{1}{10}$ second quicker). Soon, the message boards were aflame with challenges fired from both camps, and some were backed by fistfuls of cash!

The showdown was between Floyd Vick—a local nitro-dragster hotshoe—and Derrick Purvey—a veteran electric racer, whose truck is one of the quickest in the nation. Floyd ran two 1.80-second elapsed times early in the day that made the race look pretty even—on paper. But Derrick had a pair of uncharacteristically over-powered, out-of-control launches, and Floyd took home all the marbles (and more than a few hundred dollars, to boot). So that settled it, right? Not quite.

The next morning, Floyd and his nitro buddies tried to nudge Steve Saik, an ex-Californian now living in North Carolina, into a match against Texan Charlie Stomm's RB Concepts-powered car—one of the fastest nitro dragsters at the meet. Charlie's national-

record 1.796-second ET blast on Friday night had raised more than a few eyebrows. Well, Steve was running right on the national record that weekend with his 10-cell electric Immortal Force funny car, so he tentatively agreed to a friendly race. "No big deal," he thought. Charlie, equally nonchalant, just nodded, "Yeah, I guess," in answer to the challenge.

After the last qualifying rounds that day, race director Corbitt Marshburn called Steve and Charlie to the line. Steve had noted that both of Charlie's qualifying runs were in the left lane, so, of course, he cunningly chose that lane for himself, leaving Charlie the less familiar lane. Unshaken, Charlie watched patiently as Steve took his time staging, carefully lining up his car perfectly on the starting line. The contrast was odd: the electric funny car's dead silence and the cackling idle of Charlie's RB 2-stroke. At last, both cars—and the spectators—were ready, and Corbitt gave the traditional last-minute instructions, "Gentlemen, watch the light!"

At the flash of green, both cars took off simultaneously. Steve's chrome-painted funny car got a very slight $\frac{1}{100}$ -second advantage off the line, but Charlie's nitro power kicked in and rocketed him to the 6-foot and half-track (66-foot) incremental



timers ahead of Steve's electric car. As the cars streaked across the finish line seemingly tied, it was simply too close to call with the naked eye, but the electric photocell timers told the story: Steve at 1.713 at 77.34mph edged out Charlie at an incredible 1.719 at 71.81mph—a $\frac{1}{1000}$ -second margin of victory! To top it all off, it was also the quickest side-by-side race in IEDA history. After a moment of stunned silence, the crowd roared its approval at what it had just witnessed: an absolutely amazing display of equity in sheer brute horsepower from two very different people with two very different machines.

After this great match race, IEDA set up a new class for the 2002 season—the run-wacha-brung, baddest of the bad "Extreme" class: a heads-up racing, no dial-ins, no wussies, first-to-the-finish format designed to encourage more of these unusual nitro versus electric car matchups. I can't wait!

NITRO DRAGSTERS ... THE NEW KINGS OF THE STRIP?

In IEDA's newly established "Extreme" class, unlimited electric cars (no battery limits) race head to head with big-block nitro cars. In the first race of 2002, in Ocala, FL, more than 30 nitro-powered dragsters from

around the U.S. and Puerto Rico raced at the Big Daddy Nationals at the Don Garlits Museum of Drag Racing. Once again, according to the first reports hot off the IEDA website, the nitro cars stole the spotlight, as Georgia's Tim Campbell piloted his nitro rail, "McDonough," to an unprecedented 1.653 at 77.30mph. This made Tim's nitro car the second quickest in IEDA competition ever, falling just shy of the mark set by Chris Collins' "Iceman" electric dragster at 1.64 a couple of years ago. Are the nitro cars the new "top dogs," or are the electric guys locking and loading for a counter-assault of 1.5- to 1.6-second blasts? Time will tell, but this year will most certainly rewrite the record books several times! ■



SOURCE GUIDE

- ALCLAD II (813) 643-1232; alclad2.com.
- DRAG DYNAMICS (301) 997-1690; dragdynamics.com.
- DRAGMASTER; distributed by Bolink (770) 963-0252; bolink.com.
- FM PERFORMANCE (973) 235-1525; fmperformance.org.
- FUTABA; distributed exclusively by Hobbico/Great Planes Model Distributors (800) 637-7660; futaba-rc.com.
- HITEC RCD INC. (858) 748-6948; hitecrd.com.
- HPI RACING (949) 753-1099; hpiracing.com.
- IMMORTAL FORCE (704) 531-1066; immortalforce.com.
- JR RACING; distributed by Horizon Hobby (217) 355-9511; horizonhobby.com.
- KIMBROUGH PRODUCTS (714) 258-7425; kimbrough-products.com.
- KOFORD ENGINEERING (847) 759-7204; onstat.com.
- KYOSHO; distributed by Great Planes Model Distributors (800) 682-8948; kyosho.com.
- LOCKMANN PRECISION RC (760) 240-0573.
- NEW ERA MODELS (603) 888-4453; neweramodels.com.
- OFNA RACING (949) 586-2910; ofna.com.
- PARMA/PSE (440) 237-8650; parmapse.com.
- PRO-MATCH RACING promatchracing.com.
- PROTOFORM; distributed by Pro-Line (909) 849-9781; pro-lineracing.com.
- RB CONCEPTS; distributed by Sigma Trading Co. Inc (262) 789-1288; sigmatrading.com.
- ROLAND: DGA GROUP (800) 542-2307; rolanddga.com.
- W.S. DEANS CO. (562) 634-9401; wsdeans.com.

Nitro Engine Tough Tasks

Learn the tricks of the trade by Stephen Bess

If you own a nitro-powered RC car or truck, sooner or later, you'll have to do some maintenance.

This article details the "tough tasks" and the best ways to do each one with the least amount of sweat. With a little practice and patience, you'll do these jobs regularly and make it look easy.

Installing and removing flywheels

Flywheel installation and removal are the most routine jobs required of a nitro racer. If you decide to upgrade an engine, test out a clutch, or remove the crankshaft from your nitro powerplant, you'll have to remove and reinstall the flywheel. Removing the flywheel is simple when you have the right tools. First remove the clutch bell, the clutch and the clutch nut. Next, use an automotive "battery terminal puller" (sold at all auto-parts stores for less than \$10), and slip it over the flywheel and crankshaft. Twist the terminal puller's handle until the flywheel pops off, and that's it! You could alternatively use a rubber hammer to tap the flywheel off the crankshaft, but to limit crank and flywheel stress (and to avoid scratching the flywheel), invest in a terminal puller.



Bruckner Hobbies offers this neat flywheel wrench; OFNA's tool is in the background. It engages the clutch-shoe pins to hold the flywheel.



It looks like a custom flywheel puller, but this gizmo is just an automotive battery terminal puller.

To install the flywheel, first slip the tapered collet cone (included with your vehicle) over the crankshaft. Next, slide the flywheel onto the crankshaft, put a drop of thread-lock on the threads, and secure the flywheel by hand with the included flywheel nut. Next, lock the crankshaft to tighten the clutch nut. To do this, you can use OFNA's flywheel wrench, Bruckner's flywheel wrench tool or DuraTrax's crankshaft-locking tool; all are good options. Don't use a piston-locking tool, however, as the forces you exert when you tighten it can easily damage the brass bushings in the connecting rod. Tighten the clutch nut (most require a 10mm socket driver), and you've finished.



Be careful not to jab your fingers with the screwdriver tip when popping the clutch shoe springs into place. Patience!

Installing 3- and 4-shoe clutches

After you've installed the flywheel, you must install a clutch. You might think that installing a 3- or 4-shoe clutch is tricky, but after you've done it once, you'll be a pro. First, slip the springs into the shoes, and slide the first shoe over any of the metal pegs (making sure the shoes are installed with the trailing edge to the right). The most difficult part of installing the clutch shoe is snapping the spring over the clutch nut; it's difficult to do because of the limited space but relatively easy when you use a small, flat-head screwdriver. Push the clutch shoe down with your thumb while you push downward on the spring with the flat-head driver. You may have to pull the trailing edge of the shoe away from the clutch nut slightly to snap it down completely.

Removing the crankcase bearings

When rebuilding a truly worn-out nitro mill, you may want to replace one or both of the crankcase bearings. After you've removed the carb, piston and sleeve and crankshaft, the only parts that remain are an empty



crankcase and the bearings. The engine bearings are press-fit into the crankcase, so to remove them, you'll have to warm the crankcase in an oven to allow it to expand. Heat the oven to approximately 250 to 300 degrees F, and "cook" the engine for 5 or 6 minutes. Once you've heated the crankcase, remove it from the oven (use oven mitts!), and tap the bearings out



OFNA's bearing removal and installation kit uses a slide hammer to pop the bearings out with no need for heating.

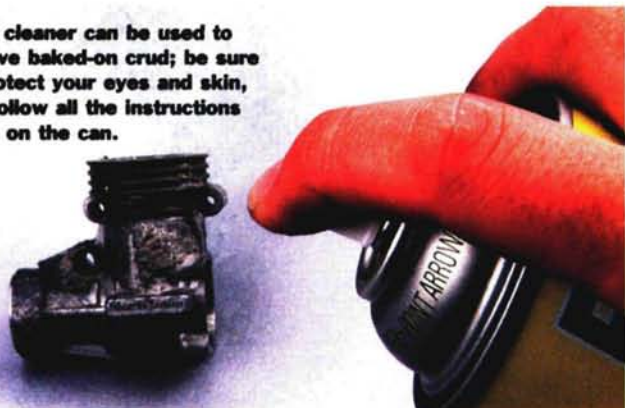
with the end of a wooden spoon or any other non-metal tool.

For a totally "factory" job, use a special bearing removal/installation tool such as the one from OFNA. This tool installs and removes crankcase bearings in a snap.

Removing cooked-on residue (varnish)

A clean engine runs cooler (and looks better) than a dirty engine. Unfortunately, engines produce high heat that can turn dirt and exhaust grime into a varnished armor that's nearly impossible to remove. The best product I've found is "Demon Clean" from Dave Gierke Flying Models; simply apply this liquid to the dirty parts and then scrub them clean. You can also use commercial-strength oven cleaner, but keep it away from anodized heads and engine parts; oven cleaner eats anodizing for lunch. If you have a rotary tool, clean the parts with a wire-brush attachment and you'll soon have a shiny finish.

Oven cleaner can be used to remove baked-on crud; be sure to protect your eyes and skin, and follow all the instructions given on the can.



Removing a tight piston sleeve and connecting rod

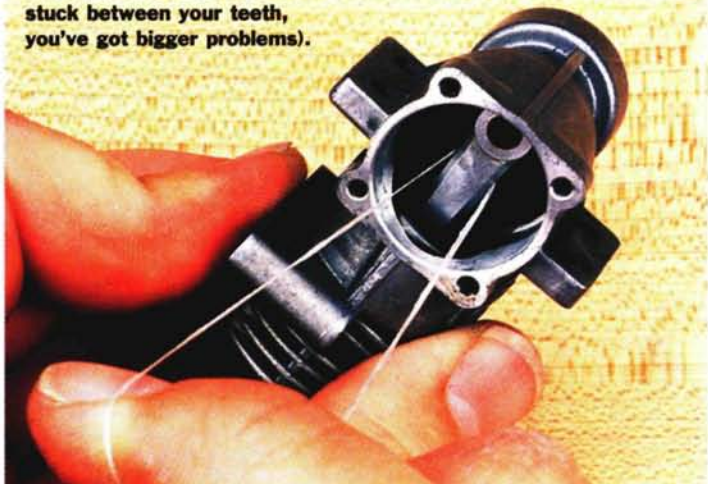
Tolerances between an engine's sleeve and crankcase are super-tight for a reason: any gap between the sleeve and crankcase can cause fuel and air to blow by the ports in the sleeve. When you want to remove the piston sleeve from the engine, this tight fit can cause problems. To minimize the risk of scratching either the piston or the sleeve itself, simply slide a few plastic zip-ties halfway into the exhaust

A couple of zip-ties are all you need to lift a tightly fitting sleeve out of the block; the piston does the work.



port. Gently turn the flywheel back and forth, and as the piston pushes the zip-ties upward, the sleeve should be dislodged. Be sure your hands and fingers are completely clean, and then grasp the sleeve and pull it out completely.

Dental floss isn't just for getting spinach out of your teeth; it's also good for pulling out conrods (out of your engine, that is; if there's a conrod stuck between your teeth, you've got bigger problems).



A tight connecting rod can also be a pain to remove, but luckily, there's an easy method. After you've removed the sleeve from the crankcase, place a few drops of oil on the brass connecting-rod bushing where it is mated with the crankshaft. Cut a short piece of dental floss, then loop it around the conrod. Now gently tug the floss to pull the conrod off the crankshaft, and then carefully pull the entire piston/conrod assembly out of the top of the engine. ■

SOURCE GUIDE

BRUCKNER HOBBIES (718) 863-3434; brucknerhobbies.com

DAVE GIERKE FLYING MODELS (716) 681-4840

DURATRAX (800) 682-8948; duratrax.com

OFNA (949) 586-2910; ofna.com

Carb Restrictor Pro's and Cons

When you talk about carb restricters, it's a foreign language to most nitro racers. The conversation stops right when you tell them restricters reduce power: you start sounding like Charlie Brown's teacher then: "Wawawawa, wawa, wah, weh wah-wah." They stare blankly and nod when, in reality, they're imagining their rigs blasting down the straight at 80mph and blowing by all the competition with a single squeeze of the trigger.

As a full-fledged power junkie, I admit that any product that's designed to decrease a nitro engine's power is one I instinctively want to avoid. But at times, easing off the trigger to drive more slowly actually results in faster lap times. Here's the 411 on how a carb restricter works and why you should consider using one under certain conditions.

WHAT DOES A RESTRICTER DO?

Restricters are designed to restrict the volume of air that goes into a carb; this effectively powers down an engine to make it more controllable on slick surfaces. Just as you can alter an engine's performance by shortening its header or by using a different tuned-pipe configuration, you can also take advantage of the tuning options carb restricters offer. Restricting an engine's air intake can result in more controllable power. Top-end performance will suffer only slightly, but on slick tracks on which you would never lay down all the power your engine has to offer, you'll never notice the difference.

Carb restricters also reduce fuel consumption; they pro-

duce the same effect as slightly leaning the fuel mixture; more mileage between tank fill-ups. If you run for 6 minutes per tank, you'll probably run longer if you use a restricter.

WHEN SHOULD YOU USE A RESTRICTER?

Restricters are most often used for off-road $\frac{1}{10}$ nitro trucks because of the trucks' relative lack of traction, lightness and powerful engines. The current 1+hp .12 engines produce more power than most of us will ever use, so if your vehicle spins out on the track, a restricter might be for you. Slippery tracks are particularly suitable for carb-restrictor use. Alternatively, use a carb restricter where you can put all the engine's power down on

the track, such as when you run a touring car equipped with foam tires on a prepped track. There is such a thing as getting too much power to the ground. These conditions may accelerate tire wear and use fuel excessively, and they place tremendous loads on the drive train. In a high-traction situation, restricters are used for fuel economy. Long races are won and lost in the pits. If a race is long enough to require even one pit stop, fuel economy is important. Let's say you have a 15-minute Main or qualifier. You can stop twice at 5-minute intervals or once after 7.5 minutes. If you're already getting 7 minutes a tank, a carb restricter might help you reduce your stops to one.

Trinity and Associated both offer carb restricters in three sizes to suit your needs. I asked Richard Hawkes, master R&D man at Trinity, his opinion on the use of carb restricters. As an alternative to a restricter, he suggests that you try a fuel with

This Picco carb from an OFNA/Picco .21 engine has interchangeable inserts (venturis) that are much like restricters but are designed as part of the carb.

higher oil content for slick, low-traction tracks. He says that several Team Trinity drivers use Trinity 20-percent-oil Break-In Fuel on super-slick tracks. Cool!

FINAL WORD

Restricters are valuable tuning tools. Sure, everyone loves wheelies and dirt rooster-tails, and some horsepower junkies might not be the first to grab a set of restricters. But losing that "horsepower ego" can help you win races; if you want to be fast on a slick track, you might have no other option than to reduce your engine's power—to a degree. The absence of a carb restrictor may be all that stands between you and a first-place finish on a low-traction track.



These Trinity carb restricters are for small-block engines that don't already have inserts of different sizes. Most small-block engine carbs have a bore of 5.5mm (0.216 inch). These restricters measure 0.17, 0.18 and 0.19 inch (left to right).

Exergen DX501 IR TEMP SENSOR

Exergen is legendary for making the most accurate infrared non-contact temp sensors used by top-level RC racers. It has now introduced the DX-Series sensors. The new models have a more comfortable design and a display that's easier to read. They're also slightly less expensive than the previous D-Series units. Exergen took the "min" and "scan" functions (not well suited to RC applications anyway) out of the D-Series sensor, installed it in a more modern housing and lowered the price. I bought mine from Minarik—a nationwide industrial supplier—but these new temp sensors are becoming available at better hobby shops.

Exergen
DX-501 IR temp
sensor—item no.
DX-501; \$260.

The Exergen DX-501 is the newest state-of-the-art infrared thermometer. It takes instant, incredibly accurate temperature readings from your RC engine.



DYNAMITE ALUMINUM SERVO ARMS

Servos are now much more powerful, and to get the most out of them, you gotta ditch those flimsy plastic servo horns that buckle under pressure. Even if you just want to add that finishing touch to your custom rig, these servo arms are just what the doc ordered. They're available in single- and double-arm configurations and in red, purple, blue and black; they can be used on Futaba, Airtronics, JR and KO Propo servos. Dynamite machined-aluminum servo arm—DYN25*; \$5.99.

These Dynamite aluminum servo arms are well suited to the increased demands of a nitro car. There are full, two-sided arms (typically used for throttle and brake applications) and half or single-sided arms (threaded for 3mm screws that are typically used to attach the steering linkage). These can replace the last "weak link" in most nitro cars that have a chassis-mounted servo-saver.

TECH Q & A

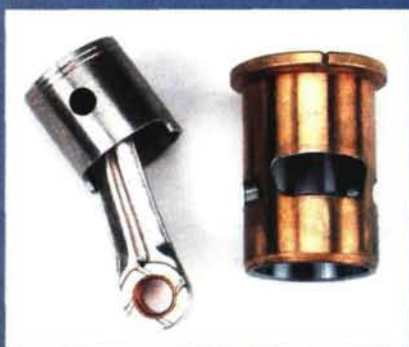
Q I've heard a couple of theories on what happens in a nitro engine with respect to the effect of heat and the resulting piston-to-sleeve clearance. One says that the piston gets tighter in the sleeve as the engine heats up; the other says that it loosens. In my experience, it seems to loosen, but the aluminum piston has a higher rate of expansion than the brass cylinder, and that seem to support the "gets tighter" theory. What's your explanation? (email)

Joe/Railman

A Joe, a 2-stroke nitro engine loosens as it heats up. Your theory on the aluminum piston and brass cylinder is also correct, but you haven't taken into account that



the aluminum used in manufacturing 2-stroke pistons is not 100-percent pure aluminum. It's actually a high-silicon aluminum alloy that expands at less than half the rate of purer aluminum. In technical terms, it has a lower coefficient of thermal expansion, or CTE. The chrome-plated brass cylinder expands more than the silicon/aluminum-alloy piston, and this results in an engine that feels looser when it has heated to a normal running temperature. ■



SOURCE GUIDE

OFNA RACING (949) 586-2910; ofna.com.
EXERGEN CORP. (617) 923-9900; exergen.com.
MINARIK CORP. (888) 646-2745; minarikcorp.com.
DYNAMITE (217) 355-9511; horizonhobby.com.
TRINITY (732) 635-1600; teamtrinity.com.

CONTACT THE PISTON POWER SOURCE

Send Piston Power questions and comments to Stephen Bess at stephenb@airage.com.

■ THE TRUCK STOPS HERE

Monsterize your Tyco Canned Heat in 6 easy steps

Even though I'm a hardcore hobby guy, I'm certainly not above a stroll through the RC aisle when I'm at a toy store. On my last stop at Toys "R" Us, I picked up one of Tyco's Canned Heat models—a Dodge Durango; it cost just \$20, and I thought it was neat. Later that week, I was talking to Tamiya America's Joe Anderson—a fellow truck fan who also has the Tyco toy. He told me about a mod that I couldn't wait to try: he used parts from a Tamiya Juggernaut Jr. Mini 4WD kit to transform his Canned Heat into a micro monster. I decided to try it, and the project turned out so well that I decided to share it with you. For about \$30, you can build one yourself!

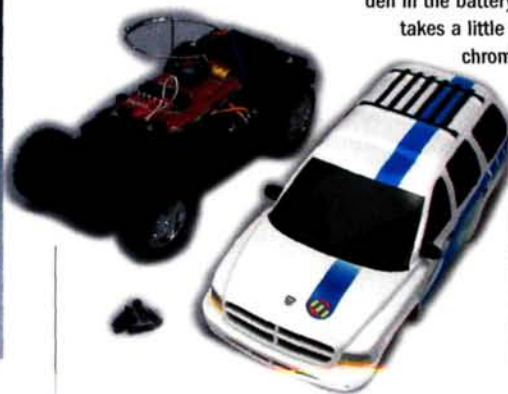


BEFORE

AFTER



Here are the parts you'll need from the Jugg Junior kit. I painted the body red to match my 1/10-scale Jugg 2.



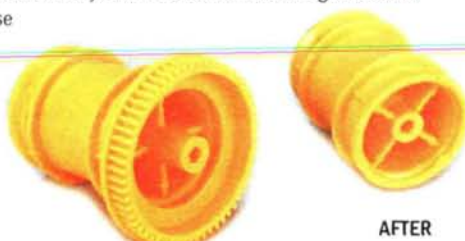
STEP 1 REMOVE THE BODY & TIRES

Start by removing the body from the chassis; five screws held the body on my Dodge Durango. One screw was hidden in the battery compartment. Remove the tires; this takes a little prying, but they will come off. Scrape the chrome off the outside of the rims so that the glue you'll use in Step 4 will stick better.



STEP 2 TRIM THE RIMS

Remove the rims from the parts tree of the Juggernaut Jr. kit. Trim away all the plastic material from the back of the yellow wheels. Remove the gear section from the two drive rims. Use a rotary tool and a grinding stone to do this, or spin them on a lathe as I did—faster!



BEFORE

AFTER

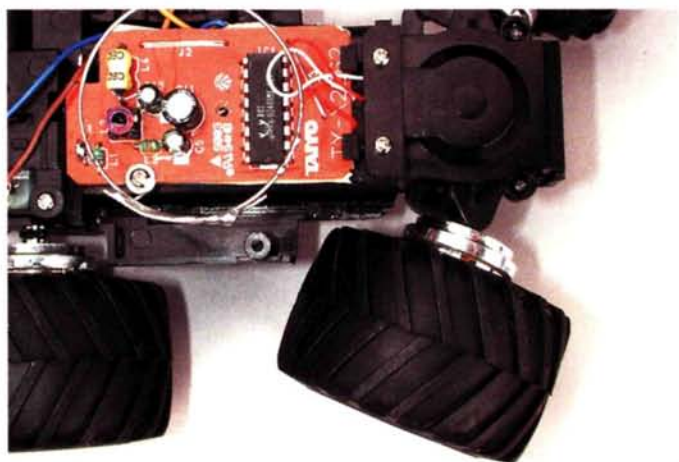
STEP 3 INSTALL THE TIRES

Install the Jugg's tires on the modified Tamiya rims. Glue the Tamiya rims to the outside of the Canned Heat's rims using thick CA. I added a small 1.5mm-thick plastic disc to the inside of the Jugg Junior rims to space the tires away from the chassis. Make sure that the Tamiya rims are perfectly centered on the Canned Heat rims.



STEP 4 CHECK WHEEL CLEARANCE

Turn the truck on, and steer the wheels from side to side to check the clearance between the tires and the chassis. You may need to trim the chassis a little.

**Meanwhile, back in the garage ...**

Remember the Weldico tow truck I showed you last month? I have been working my butt off the last couple of weeks and here's what I have finished so far. It should be done soon!

STEP 5 BUILD A BODY MOUNT

You'll have to "freestyle" a little here. You could use $\frac{1}{10}$ -scale body posts to do the job, but they'll look enormous on the tiny $\frac{1}{24}$ -scale body. I decided to build a "shelf" on the chassis using Evergreen sheet-styrene plastic, which is available at hobby stores. To determine the proper dimensions, I first used folded card as a substitute for the plastic. Once I had the dimensions right, I simply cut and glued the plastic parts to match. Note the "cleats" used to brace the corners. The shelf's final dimensions are 115x44x33mm.

**STEP 6 ATTACH THE BODY**

We're in the home stretch! Using a pin vise, I drilled $\frac{1}{16}$ -inch holes through the shelf's mounting flanges to match the existing holes in the Canned Heat chassis. I attached the shelf with self-tapping screws, I painted mine flat black then used hook-and-loop tape to stick the body to the shelf.



This project is fairly inexpensive and should take only a day or two to complete, depending on how fast your paint and glue dry. The bigger tires make the Canned Heat monster a lot faster than the stock truck. It also doesn't bounce around as much because the big rubber tires are able to soak up the small bumps. I have a blast driving the little truck around the office!

12R SS RACING ENGINE



1+ HORSEPOWER

The new line of HPI Nitro Star 12R engines feature true ABC construction with a long-lasting hard chrome sleeve, aggressive porting and big 5.5mm carburetors. To keep the engine running cool we added a large machined aluminum purple anodized heat sink head and a black heat sink coating on the case. The result is a 1+ horsepower engine that will make your nitro touring car scream. We offer the 12R engines in 3 different models, give one a try!

ROTARY CARB

Two of the 12R engines feature our 5.5mm rotary carb with dual needles that allow you to easily adjust the low speed and high speed settings. Our rotary carb is one of the easiest to tune on the market, and it bolts into most cars without special throttle linkage. The big 5.5mm rotary carb is offered on the 12R SS with and without pullstarter.



SLIDE CARB

Our highest performance version, the 12R SC, has a 2 needle slide carb and no pullstarter. The 5.5mm slide carb has a little less restriction for more airflow and more power. You'll need our A889 linkage set for installation on most nitro touring cars.

— Truckers... we recommend our torquey 155S for you! —

HPI Nitro Star 12R engines are in stock now!

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4 X 4



TRICK TRUCK STUFF

ESP TRAXXAS Maxx Clod wheel adapters

Are the tires on your Maxx trucks too small for you? If they are, check out these high-quality adapters from ESP; they allow you to fit large Tamiya Clod Buster and Juggernaut 2 meats on your Maxx. The adapters are machined out of aluminum hex stock. The five holes in the face of the adapter fit the Clod wheels perfectly. A threaded-aluminum sleeve screws onto the stock axle, the hex adapter slides over the threaded sleeve, and a large Allen-head screw holds everything in place. T-Maxx Clod wheel adapters—ESP068; \$59.95.



MAXIMIZER X75 faceplate

These new faceplates for Maximizer bead-locker rims for Traxxas Maxx trucks look incredible, and they offset the tires 3/4 inch more than stock on each side of the truck. They are available in red, blue, black and silver. X75 face plate—4975R (red), 4975BL (blue), 4975BK (black), 4975S (silver); \$12.95.

NEW ERA .18 engine adapter for the Traxxas Nitro Stampede

These adapters are designed to allow you to easily install a .18 engine in the Traxxas Nitro Stampede. The machined aluminum-plate mounts are available in silver and blue; bolt the engine to the mounts and drop that big engine right into your truck. Nitro Stampede .18 engine mount—TRS110; \$19.95.



NEW ERA Aluminum bulkhead for the Traxxas Nitro Stampede

New Era's new front bulkhead is sure to add beef to your Traxxas Nitro Stampede. This direct replacement for the stock unit is machined out of aluminum billet and is available in blue and silver. Stampede aluminum front bulkhead—TRS330; \$37.50.

TALK TRUCK!

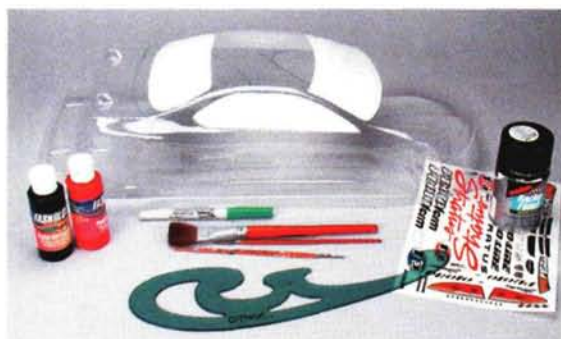
Send your 4x4 questions and comments to Kevin Hetmanski at kevinh@airage.com

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TYCO tycorc.com.

No Masking Required

Creating more advanced color schemes usually means paying close attention to your masking and color application, and these skills are usually learned by trial and error. While at the track recently, I met a reader who had sworn off trying "harder" paint jobs. Although he enjoys "Body Shop," he admitted that whenever he tries anything more complex than a one-color paint job, it ends up looking as if his little sister painted it. Despite my advice and encouragement, he swore he'd stick to one color. "When you write an article about a cool-looking race paint job that doesn't require any masking other than the windows, I'll try it." His comment was more in defiance than anything else, but I took it as a personal challenge. If you've found yourself in the same situation—maligned by masking—this one's for you.



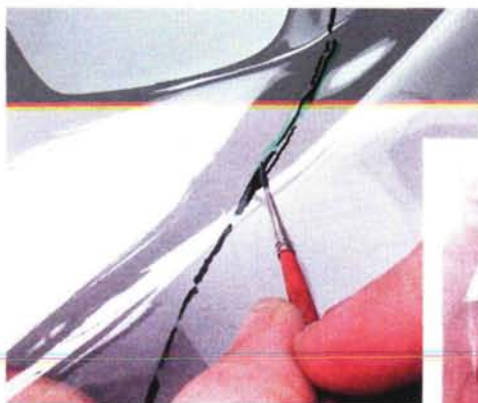
2 Designs that play off a vehicle's body lines flow best because your eyes naturally follow the car's contours. Such designs also happen to be the easiest to lay out, so why not take advantage of it! Create a border line on the outside of the body using a permanent-ink marker. I carried my line up onto the hood and around the rear window.

V



1 Let me dispel one of the biggest myths about painting: complicated designs and fancy equipment aren't absolute requirements. A few good paintbrushes of various sizes, a French curve and a few colors are all you need to create bright, bold graphics that draw spectators from far away and subtle details that capture the eye close up.

3 Using a narrow, long-bristle brush, paint along the main border lines inside the body while varying the pressure on the paintbrush to alter the line's width. FasKolor used straight from the container will generally provide opaque coverage in a single stroke. Don't worry about creating a perfect line; the appeal of this design lies in the jarring separations between bold contrasting sections. You'll see.



4 Time to hit the lines a second time, but the goal now is to connect the gaps; keep in mind that your object is randomness, so have fun. Widen the lines until you're satisfied with the overall look.

away and subtle details that capture the eye close up.



5 For the last step for the borders, you'll need a tiny "0"-size brush. The idea isn't necessarily to widen the stripes but to give the design a distressed look.

6 When you've finished with the black, you should have something like this. The black lines follow the original layout but still look artistically bold contrasting sections. You'll see.



7 Once the black has fully dried, it's time to lay down the main accent color. I used red because of its impact. Avoid metallic, pearl, fluorescent and candy colors because they tend to show brush strokes. Use a fine brush near the edges to establish the border, and then use a high-quality soft brush to spread the paint evenly. This type of brush costs about 5 bucks and allows excellent edge control. Make only one pass along the sides to avoid "softening" the black edges. After you've covered the design, let the paint dry and then go back and hit any areas that look too light with another coat.



9 Cut a narrow border (approximately $\frac{1}{16}$ inch) inside the perimeter of the window mask. Remove the outside portion, press the mask edges down firmly and paint in the window molding.

8 Once the design has dried fully, it's time to fill in the background color. Hit the inside of the body with a light fog of Pactra spray paint. A heavy application of a lacquer-based spray paint will eat right through the water-based FasKolor (bad thing). Build up several light layers until the body is sufficiently covered. If you want to add window borders, spray on a layer of silver to make the white totally opaque.



10 Remove the reference lines from the body's exterior using isopropyl alcohol or Traxxas Nitro Wash. Never use lacquer thinner on the outside of the body because it will etch right into the Lexan and make it look cloudy. Trim the body and apply the factory stickers wherever you want them.

The brush technique is just one way to create a cool paint job, even if your skills don't run much beyond a one-color spray job. The important thing is not to let past mistakes discourage you from painting. If you want to, there's a way for you to create a body that will make you proud. We'll look at a variety of mask-free methods in the future, but meantime, go paint something. ■



FRESH PAINT

Our own Kevin "4x4" Hetmansi takes the spotlight this month with his purty Tamiya TXT-1. The truck is featured in the 2002 issue of *RC Monster Trucks*. I don't want to steal any of Kev's thunder, so I'll just say that it's worth investing in this special issue just to learn his customizing tricks from his article, "How to Detail Your Monster Truck."

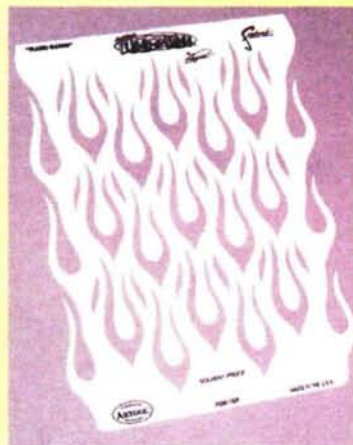
Do you have a sharp, uncluttered photo of your best paintwork? Send it in! Explain the types of paint, products and techniques you used to finish it. Be sure to include your full name and address and your email address if you're online. For information about sending electronic images, check out www.action.com. Send print or slide photographs to "Body Shop," *RC Car Action*, 100 East Ridge, Ridgefield, CT 06877-4606, USA.



NEW
IN THE
SHOP

ARTOOL PRODUCTS CO. Freehand Airbrush Templates

Having the skills and ideas to accomplish a paint job is one thing, but having the tools is another. These airbrush templates come in a wide array of shapes and edges to enhance any paint job. The templates are solvent-proof and flexible enough to be used as freehand masks or as stencils to draw and cut designs. Available stencils include cool things such as flames, clouds, brains, diamond plate, bullet holes, stripes and a bunch more. See the entire range at artoolproducts.com.



CONTACT THE BODY SHOP

Send Body Shop questions and comments to Bob Hastings at bobh@airage.com

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Mobile Miniature Speedway, Theodore, Alabama 36582; Richard Sweetser, 866-653-6643 or 251-653-6643; email: hurricane.71@gateway.net

North Cullman Raceway, Cullman, Alabama 35058; Daniel Lollies, 256-775-2491; email: cullmanrchoobbies@yahoo.com; web: www.cullmanrchoobbies.homestead.com

Oak Mtn R/C Raceway, Columbiana, Alabama 35051; Matthew Gordon, (205)669-6837; email: oakmtnrcraceway@hotmail.com

Phoenix Raceway & Hobby, Phoenix City, Alabama 36867; Chris Watson, 334-298-9200; email: phoenixhobbies@hotmail.com

Spring Cove International Speedway, Florence, Alabama 256-757-1562; email: rvines@hiway.net; web: www.springcovespeedway.com/SpringCove.htm

ARIZONA

Hobby Town Raceway, Scottsdale, Arizona 85251, (602) 948-3946

HobbyTown Mountain Raceway, Flagstaff, Arizona 86004; Richard, (520) 214-9887

HobbyTown Raceway, Tucson, Arizona 85704, (520) 882-8888

HobbyTown U.S.A., Phoenix, Arizona 85044; Linda McFarland, (480) 598-5282

R/C Sports Mania, Phoenix, Arizona 85017; Gary Dick, (602) 278-3671

Scottsdale R/C Raceway, Scottsdale, Arizona 85251; Scott Anfinson, 480-945-2186

ARKANSAS

Grand Slam Hobby, Ft. Smith, Arkansas 72901; Bryon Shumate, (501) 648-1994; web: www.gshobby.com

Hobby Town USA, Fayetteville, Arkansas 72703; Darrell Irvin, (501) 571-3730

Sparks R.C. Raceway, Paragould, Arkansas 72450; Tommy Sparks, (870) 239-3606

CALIFORNIA

Bear Valley Super Speed Way, Tehachapi, California 93561; Mike Zanghi, 661-821-4100; email: mikezanghi30@hotmail.com

California R/C Raceway, Anaheim, California 92806; Brad or Taka, (714) 630-9340

Capital City R/C Center, Sacramento, California 95829, 916-383-3445; web: www.capitalcityrc.com

Castle Hobbies, San Jose, California 95124, (408) 377-3771

CCRCCC, California City, California 93505; Josh Geiger, (760)373-2537; email: gorace@ccis.com

Crystal Park Raceway, Compton, California 90202-4925; James Reese, 310-631-0307; email: mailto:info@crystalparkraceway.com

Delta R/C Raceway & Hobbyshop, Antioch, California 94509; Jerry, (925) 778-2965; web: www.deltarc.com

Extreme RPM Hobbies, Grand Terrace, California 92313; Bobby Haney, 909-370-3379; email: Extremerrpmrace@aol.com; web: www.ExtremeRpmRacing.com

Fastrax, Ridgecrest, California; Danny Quinn, (760) 377-1193; email: webmaster@fastraxrc.com; web: www.fastraxrc.com/

Grams Raceway, Willits, California 95490; Nathan Long or Mark Long, 707-459-1275; email: nate_racer@yahoo.com

Hobby World, San Jose, California 95129; Guy Bassett, (408) 873-2109

HobbyTown Raceway, Poway, California 92064; Lee, (858) 513-0373; web: www.hobby101.com

Hobby World, San Jose, California 95129; Guy Bassett, (408) 873-2109

HobbyTown Raceway, Fresno, California 93711; John Toews, 559 435-3342; email: rcfast@mediaone.net

Hot Rod Hobbies, Saugus, California 91350; Jimmy Babcock, (661) 255-2404

Jake's Performance Hobbies, Rohnert Park, California 94928; Jake, (707) 586-3375; email: JPHRacing001@aol.com

L&B Bone Yard, Inyokern, California 93527; Louis Marcus, (714) 377-4811

Lucerne Valley Raceway, Lucerne Valley, California 92356; Frank Rodrigue, (760) 248-7305

Nor-Cal Mini-Speedway, Woodland, California 95695; Steve Van Atta, (530) 668-5678

Paradise Hobbies, Paradise, California 95969; David Lafabregue, (530) 877-6447; email: paradisehobbies@aol.com

Porterville RC Raceway, Porterville, California 93257; Dan Beebe, (559) 789-0545; email: dibeebe@thegrid.net

R.O.C.K.S. (Radio Operated Car Klub of Solano), Fairfield, California 94533; Mike Learn, (707) 447-0492

Racer's Haven Raceway, Bakersfield, California 93309; Greg Cooper, 661-835-0443

Rattlesnake Raceway, Cottonwood, California 96022; Mel or Mike Fisher, (530) 347-7215; email: RC-geezers@aol.com; web: members.nbci.com/CAR-RCORR

Rescue Mini R/C Speedway, Rescue, California 95672; Bruce Pease, (530) 621-3948; web: www.innerrc.com/~racing/

Ripon R/C Speedway, Ripon, California 95366; Dan Tanis, (209) 599-5160

Sacramento RC Racing & Hobbies, Sacramento, California 95824; Andreas Muller, (916) 424-4001; email: andreas123@earthlink.net; web: www.77sunset.com

Showtime R/C Speedway, Bakersfield, California 93301; Don Risner, 661-203-1481; email: Showtimetrack@aol.com; web: WWW.ShowtimeSpeedway.com

So Cal R/C Raceway, Huntington Beach, California 92646; Jim or Lana, 714-963-7484; email: info@socalrc.com; web: www.socalrc.com

Sonora R/C Raceway, Sonora, California 95370; Jeff Amos, (209) 536-0580

SpeedWorld Raceway, Roseville, California 95678; Billy Bowerman, 916-783-8864; email: speeddog@mindsync.com; web: speedworldraceway.com

The Dirt Valley R/C Racepark, Hemet, California 92544; Joe Christenson, (909) 925-7592

MHOR R/C Raceway, Aurora, Colorado 80012; Jess A. Brockman, (303)343-0151; email: questions@mhorr.com; web: www.mhorr.com

Valley West Off-Road RC Club, Grand Junction, Colorado 81504, 970-242-8845

CONNECTICUT

K&N R/C Speedway Inc., Stafford Springs, Connecticut 06076; Jim Tierinni or Steve Schmid, (860) 684-9896

Manchester Hobbies, Manchester, Connecticut 06040; Jim or Mike Tierinni, (860) 643-4768

R/C Madness, Enfield, Connecticut 06082; Christopher Marcy, (860) 741-6501; email: cmarcy@rcmadness.com; web: www.rcmadness.com

Xtreme Radio Control, New Milford, Connecticut 06776; Paul or Pete, (860) 354-4703

DELAWARE

ESRC, Seaford, Delaware 19973; Bill Auchterlonie, 302-734-2757/302-629-3944; email: whatsappbnt@msn.com; web: reachus.at/rcracing

PTV Hobbies, Dover, Delaware 19901; Pierino Vicere, (302) 697-8350; email: pthobbies@mindspring.com

FLORIDA

B&T RC Central, Fort Walton Beach, Florida 32547; Mike or Tim, 850-863-1666; email: funandhobbies@aol.com; web: btrcentral.com

Daytona R/C Racing Assoc., Ormond Bch., Florida 32174; Tim Davis, 904-676-9001; email: tdavis32@earthlink.net; web: www.oe-pages.com /SPORTS/Autoracing4tdavis/

Farmers Hobby Shop & Raceway, Tampa, Florida 33619; Greg Cardone, 813-248-3314; web: www.farmersshoby.com

First Coast Speedway, Jacksonville, Florida 32211; Dennis Harvey, 904-744-0400; email: dlhwoody@aol.com; web: www.fortunecity.com/marina/finisterre/1605/fcar

Monter Hobbies, Deerfield Beach, Florida 33441, (954) 428-9118

Monza R/C Speedway, Miami, Florida; Ed Delgado, (305) 437-9895

Morris Kohls Raceway and Hobby Shop, Tampa, Florida 33604; Morris Kohl, (813) 931-1626

My Rose Hobbies & Crafts, Jupiter, Florida 33458; Mark Watson, (561) 744-3800

NORRA, Naples, Florida 34104; Dan Rodriguez, 941-352-9021; web: www.norra.mainpage.net

G&C Hobby Raceway, Lantana, Florida 33462; George, 561-547-3812; email: gncobbies2@cs.com; web: www.gncobbies.com

GB's Hobbies, Port St. Lucie, Florida 34952; Track Owner, 561-460-2844; email: qaircft@bellsouth.net

Grand Prix RC-Club, Ft. Pierce, Florida 34945; Luther Peterson, 561-473-2130; email: LWPSPEED@aol.com

Gulf Coast RC Car Club, Naples, Florida 34105; Mark Benfield, 941-774-7116; email: teamnofear@aol.com

Hobby Central, Pensacola, Florida 32504; Bill McLester, 850-471-9800; email: trackinfo@hobbycentralrc.com; web: www.hobbycentralrc.com

Hobby World Raceway, Jacksonville, Florida 32210; Greg, (904) 772-9022

Kissimmee R/C Auto Racing, Kissimmee, Florida 34741; John Rosser, (407) 944-4913; email: john@craftworldflorida.com; web: www.craftworldflorida.com

Means R/C Raceway, North Fort Myers, Florida 33903; Pete Gonzalez, (941) 772-2251; email: jaimewootton@worldatt.net; web: members.nbci.com/wootj

Monster Hobbies, Deerfield Beach, Florida 33441, (954) 428-9118

Monza R/C Speedway, Miami, Florida; Ed Delgado, (305) 437-9895

Morris Kohls Raceway and Hobby Shop, Tampa, Florida 33604; Morris Kohl, (813) 931-1626

My Rose Hobbies & Crafts, Jupiter, Florida 33458; Mark Watson, (561) 744-3800

NORRA, Naples, Florida 34104; Dan Rodriguez, 941-352-9021; web: www.norra.mainpage.net

KEY TO SYMBOLS			
	Indoor		Concrete
	Outdoor		Asphalt
	Off-road		Minis & Micros
	Road course		On-site hobby shop
	Oval		AC power
	Dirt oval		Auto lap counting
	Carpet		Food available

Ocala Radio Controlled Car Club @ A2Z Racepark, Ocala, Florida 34478; Tom & Melanie Hitchcock, (352) 369-1895; email: staff@orccc.org; web: www.orccc.org

Port St. Lucie Racing, Port St. Lucie, Florida 34953; Frank Spadavecchia, (561) 336-8711

Pro Hobbies Speedway, Apopka, Florida 32712; Jim, (407) 886-4615; email: prohobby@junio.com

Sand Dollar Speedway, Navarre, Florida 32566; Jim or Bev Patterson, (850) 939-8788; email: sanddollar-speedway@aol.com; web: members.aol.com/sanddollarspeedway/index.html

Sarasota RC Speedway, University Park, Florida 34201; Jim Wilson, (941) 358-7047

South Palm Beach Racers, Boca Raton, Florida 33486; Mike Fazio, 561-338-5367; email: epine01@bell-south.net; web: www.gopbi.com/community/groups/sprclub/

Superior Hobbie R/C Parking Lot Racing, Casselberry, Florida 32707, (407) 834-9299; email: racing@superiorhobbies.com; web: www.superiorhobbies.com

SWF RC Car Club, Fort Myers, Florida 33907; Mike Nardone, 941-278-1295; email: swfrcarclub@yahoo.com; web: swfrcarclub.tripod.com/swfrcarclub

Tallahassee R/C Speedway, Tallahassee, Florida 32301; Roland Costine, (850) 671-2814; email: hidingami@aol.com; web: www.geocities.com/rcdude1/rccars.htm

Tampa R/C Raceway, Seffner, Florida 33584; Carole Raimondi, 813-655-6366; email: carolehobbytown@aol.com

West Coast R/C Club, Lutz, Florida 33549; J.R. Sanyet, President, 813-991-0168

GEORGIA

Augusta R/C Racer's Club, Augusta, Georgia 30909; Darren, 706-860-5608

Dalton Raceway and Hobby, Dalton, Georgia 30720; Keith Manton, 706-226-6699; email: keithm@dalton.net; web: www.daltonraceway.com

Hobby Town Raceway, Columbus, Georgia 31909; Frank Bastos, (706) 660-1793; email: fbastos@mind-spring.com; web: www.hobbytown.com

Primetime Raceway, Calhoun, Georgia 30701; Tommy Jackson, 706-625-9037; email: PRIMETIMEHOBBY@GCCIINTERNET.NET; web: PRIMETIMEHOBBY@GCCIINTERNET.NET

SCORE-Phil Hurd Raceway, Savannah, Georgia 31419; J. Filipow, (912) 232-9985; email: jfilipow@scad.edu; web: www.score-racing.org

Sugar Bowl R/C Speedway, Sugar Hill, Georgia 30518; Shelley Bailey, (770) 945-6709

The Flight Box Hobby Shop, Rome, Georgia 30161-6826; Leslie Duke, (706) 234-3014

HAWAII

A.S.I. Racing, Kapaa Kauai, Hawaii 96746; Arnold Morales, 808-821-8132

Radio Control Assoc./Alaa Park Raceway, Pearl City, Hawaii 96782; Ace R/C Products, (808) 456-1279

Sandy Flemings, Pearl City, Hawaii 96782; Dave Caldwell, 808-456-7272; email: info@formula1-rc.com; web: www.formula1-rc.com

IDAHO

Almosta Ranch R.C.s, Twin Falls, Idaho 83301; Casey Clements, (208) 733-8219; email: sp-casey@magiclink.com

Boise Hobby Raceway, Boise, Idaho 83705; Jim, (208) 363-9555

Capital Dirtburners, Boise, Idaho 83702; Jim Small, 208-433-1631; email: cdbtracers@qwest.net; web: communities.msn.com/capitaldirtburners

Pocatello Extreme Race Way, Pocatello, Idaho 83201; Anthony Stewart, 208-233-8163; email: dapcohobbies@yahoo.com

Redneck Raceway, Pocatello, Idaho 83201; Randy Willson or Tim Hancock, 208-238-3353 or 208-238-0609; email: Redneck_Raceway@hotmail.com

ILLINOIS

AJs Raceway & Hobby, Dekalb, Illinois 60115; A.J. 815-756-2772; web: www.ajsraceway.com

C.I.R.C.A., Jacksonville, Illinois 62650; Sport 'n' Hobby, (217) 245-1375

Dirt Slingers RC Club, Ottaville, Illinois 62052; Valerie Dellenbach, 217-942-6891; email: dirtslingers@hotmail.com; web: www.dirtslingers.org

His N Hers Hobbies Raceway, Bloomington, Illinois 61701; Kevin Turek, 309-827-0204; email: hisnherhobbies@aol.com

HobbyTown USA, Oak Park, Illinois 60301; Mark or Fred, (708) 445-8056; email: htupol@aol.com

Machesney Park Raceway, Machesney Park, Illinois 61115; Gina, (815) 282-1311; email: mpr30@home-stead.com

Monee R/C Raceway, Monee, Illinois 60449; Roy or Roberta Moody, (708) 534-2422 (track), (708) 799-5597 (office)

Primetime Hobbies, Tremont, Illinois 61568; Don Davis, 309-925-9999; email: staff@primetimehobbies.com; web: www.primetimehobbies.com

R/C Raceway, Palatine, Illinois 60067; Jamie Pauls, 847-612-3140; email: jamie@sharingideas.com; web: www.sharingideas.com

Radio-Active Raceway, Bolingbrook, Illinois 60440; Jim, (630) 759-7557

Venture Raceways, Libertyville, Illinois 60048, (847) 549-6963

INDIANA

Bremen Racing Ent., Bremen, Indiana 46506; Dale Heuberger, 219-546-3807

Duneland Hobbies & Raceway, Hobart, Indiana 46388; Ron, 219-945-1239; email: RTrobaugh1@email.msn.com; web: www.dunelandhobbies.com

GM Raceway, Elkhart, Indiana 46516; Pete Russell, 219-293-1827

Hardesty R/C Raceway, Hamlet, Indiana 46532; Max Hardesty, (219) 867-8600

Hobby Barn Raceway, Terre Haute, Indiana 47802-9694, (812) 299-5773

Hobbytown U.S.A., Indianapolis, Indiana 46250; Sonny Brown, (317) 845-4106; email: trackinfo@hobbytownindy.com; web: www.hobbytownindy.com

Madison Fun Wheelers, Madison, Indiana 47250; Charles McCormick, 812-265-4576; email: chatchel@seidata.com

P&T Hobbies and Raceway, Mitchell, Indiana 47446; Paul Weber or Tom Logsdon, (812) 849-6666; email: ptnhobby@quest.net; web: www.ptnhobby.com

Pete Russell's R/C Speedway, Elkhart, Indiana 46516; Pete Russell, 219-293-1827

R/C World of Indiana, Lynn, Indiana 47355; Joe Kolp, (765) 874-2464; email: rcworld@globalsite.net; web: www.RCWORLD.com

RC Barn, Monroe, Indiana 46772; Mark Lengerich, (219) 692-6600; email: bigdaddy@adamswells.com; web: www.rcbarn.com

Schoolyard RC Raceway, Lagrange, Indiana 46611; David W. Bryan, 219-463-3598; email: dwbryan@loc.net

Showtime Lot Racing, Fort Wayne, Indiana 46819; Mike Romines, (219) 478-6099; email: fortwayneparktripod.com/

IOWA

Ames Radio Control Speed Assoc., Ames, Iowa 50014; Ryan Davis/Brad Scandrett, 515-231-3813/515-432-0467; email: Davismotors@aol.com

Delb's Speedway, Clinton, Iowa 52732; Rusti's Miniatures and Hobbies, (319) 243-2697

Dubuque R/C Speedway, Dubuque, Iowa 52001; Paul Conlon, (319) 556-2736

Hobby Haven, Des Moines, Iowa 50322; Rick Marble, (515) 276-8785; web: www.hobbyhaven.com

Independence, Independence, Iowa 50644; Eugene Bachman, 319-266-3857; email: BachmanE2@hotmail.com

Inside Challenge, Keokuk, Iowa; Jessie, (319) 524-2225

Iowa City R/C Racing Association, Iowa City, Iowa 52240; Hobby Corner, (319) 338-1788

IROAR-Vinton Raceway @ Vinton Roller Rink, Cedar Rapids, Iowa 52402; Ed Karr, 319-362-1291; email: boxkarhobby@aol.com

Manly R/C Club, Manly, Iowa 50456; Bruce Hill, (641) 454-2025

Marble's Raceway, Des Moines, Iowa 50317; Rick Marble, (515) 262-7507

Radio Control Raceway Park, Fort Dodge, Iowa 50501-6746; Bernie Halverson, (515) 576-3780; email: bhalverson@dodgenet.com

RiverFront Speedway, Fort Dodge, Iowa 50501; Bernie Halverson, 515-576-3780 (515-571-1717 Race Day); email: bhalverson@dodgenet.com

Wild Bill's Raceway, Knoxville, Iowa 50138; William Anderson, Jr., 641-842-5973; email: wildbilz@iowatele.com.net; web: www.wildbillsracing.com

KANSAS

Air Capital Hobbies Raceway, Wichita, Kansas 67212, (316) 721-4164

D&B Raceway, Menlo, Kansas; Ron Ball, (785) 855-2370

KENTUCKY

Coyote Run Raceway, Lexington, Kentucky 40507; Paul Purcell, 859-253-9330; email: coyoterace1@hotmail.com; web: fullspeedto/coyoterunraceway/

Dixon's R/C RaceWay, Hazard, Kentucky 41701; Jeff Dixon, (606) 436-4820; email: jeffdr1@hotmail.com

Mayking R/C Speedway, Mayking, Kentucky 41837; Jon Fields, 606-633-4700; email: jon1@se-tel.com

Pit Stop Hobbies, Paducah, Kentucky 42003; Robert or Rodney, 270-443-0052; email: pitstop1@aol.com

Trio Hobbies & R/C, Radcliff, Kentucky 40160; Maurice Johnson, (502) 351-7547

Wildcat Speedway, Nicholasville, Kentucky; David Bowles, 859-272-0231

LOUISIANA

Fast Pace Hobbies, Alexandria, Louisiana 71301; Joseph or Casey Toralba, 318-561-2070; email: fastpacehobbies@aol.com

Gator R/C Raceway, Moss Bluff, Louisiana 70612; Tony Diaz, 337-855-3206; email: keithsjac@aol.com; web: homepage.mac.com/kmaples/

Hwy 44 Hobby Shop, Gonzales, Louisiana 70737; Eric Olmstead, (225) 644-1773; email: eric209@aol.com

Red Stick R/C Raceway, Baton Rouge, Louisiana 70814; Michael Pino, 225-218-1002; email: redstickraceway@aol.com; web: www.redstickraceway.com

St. Charles RC Speedway, Destrehan, Louisiana 70047; Al Cazalot, (504) 764-0625; email: stcharlesracer@home.com; web: members.home.net/stcharlesracer

MAINE

Central Maine R/C Speedway & Hobbies, Fairfield, Maine 04963; David Prescott, (207) 453-4588; email: rccracer@mint.net

Clay Bowl R/C Hobbies, Greene, Maine 04236; Pat Cap, (207) 946-5003

MARYLAND

Coles Race Way, Waldorf, Maryland 20602; Cole Brincefield, (301) 843-1386; email: kbrincefield@cs.com

GPA Hobbies, Crofton, Maryland 21114, 301-858-0004

The Track, Gaithersburg, Maryland 20877; Mimi Wong, (301) 417-9630; email: mimitrtrack@yahoo.com; web: www.rctrack.com

MASSACHUSETTS

Big Boys Toys, Fall River, Massachusetts 02723; Track Owner, 508-677-9400

East Templeton Model Raceway, Templeton, Massachusetts 01468; Keith Anderson, 1-978-632-1619; email: keith@glowplug.com; web: glowplug.com

Everett Raceway, Everett, MA, Massachusetts 02149-1700; Luangel Perez, 781-929-3604; email: elkabong13@yahoo.com

Hi-Tech Hobbies, Raynham, Massachusetts; Ruben, (508) 880-5373

Megadrome Raceway, North Adams, Massachusetts 01247; Bob Blanchette, 413-743-7223

Northboro Speedway, Northboro, Massachusetts 01532; Bob Trimble, 508-393-8087 or 393-2691

R/C Excitement, Inc. **Hobby & Raceway**, Worcester, Massachusetts 01605; Mike Gordon, 508-753-8676; email: rcexcitement@aol.com; web: www.rcexcitement.com

RPM RC Raceway, Abington, Massachusetts 02351-1094; Richard Tonetti, (781) 857-2300; email: hobotown@aol.com; web: www.rpmhobbys.com

MICHIGAN

Backyard R/C Raceway, Brown City, Michigan 48416; Tom Jones, (810) 793-0257; email: JONES_TNT_2000@YAHOO.COM

D.R. R/C, Taylor, Michigan 48180; Bobby or Fred, (734) 287-7405; web: www.downriversracing.8k.com

E.U.P., Kincheloe, Michigan 49788; Joel Wiggins, 906-495-3503

Fastraxx, Brownstown, Michigan 48173; Greg Yingling, (734) 379-8980; email: fast3@hotmail.com

Freedom Hill R/C Raceway, Sterling Heights, Michigan 48312; Jim McKenna, (810) 268-3996 (810) 268-3996

Great Lakes Racers Club, Grand Rapids, Michigan 49588; John Warner, 616-838-2231; email: Gr8LksRacers@aol.com; web: www.rogers.3.com/glr/

Hideaway Raceway, Napoleon, Michigan 49201; David Carlisle, 1-517-536-8821; email: adcarlisle1@netscape.net

Jons Hobby, Mt. Pleasant, Michigan 48858; Jon Beutler, (517) 773-5412; email: jonshobby@earthlink.net; web: www.jonshobby.com

JT Superspeedway, Battle Creek, Michigan 49015; Jerry or Sam, 616-965-0116

Larrys Performance R/Cs, Commerce, Michigan 48390; Jess or Oppie, 248-926-1140; email: lprcs@qwest.net

Lazer RC Speedway, Adrian, Michigan 49221; Russ Johnson, (517) 263-2806

N.M.R.C.C. Raceway, Gaylord, Michigan 49735; Gabe, (517) 732-3963; email: hobby-toy@voyager.net

R&L Hobbies & Racing, Portage, Michigan 49002; Rex Simpson, (616) 323-3686; web: www.rlhobbies.com

R.A.C.E. Inc., Jackson, Michigan 49203; Sam Sprang, (517) 787-9161

Raw Roots Race Tracks, West Olive, Michigan 49460; Roy Bennink, (616) 399-9338

Village Hobbies, Hesperia, Michigan 49421; John Fosdick, 231-854-1374; email: vhracing@triton.net

Village R/C Raceway, Decatur, Michigan 49045; Chuck Nolke, (616) 423-7878

Washtenaw R/C Raceway, Ann Arbor, Michigan 48103; Jim Rousseau, 734-395-5048

MINNESOTA

Bruce McCullough Memorial R/C Speedway, Cloquet, Minnesota; Howie Port, (218) 879-5174; email: port.hole@mcworld.com

Country R/C Raceway Park, Belview, Minnesota 56214-8115; Charles L. Steff, 507-641-8115

J's Radio Control Race Park, Starbuck, Minnesota 56381; Jay Campbell, (320) 239-4827

Kevin's Off-Road Raceway, Crookston, Minnesota 56716-2317; Kevin Altepeter, (218) 281-7523; email: kevin@krcproducts.com; web: www.krcproducts.com

National Speedway, Fridley, Minnesota 55432; Steve Hedenland, 763-571-9283; email: mrtip@nationalhobby.com; web: www.nationalhobby.com

Northwoods Hobby Raceway, Brainerd, Minnesota 56401; John or Doug, (218) 829-9257

Twin Cities Hobby & Raceway, Brooklyn Park, Minnesota 55443; Mark O'Brien, 763-569-5069; email: wooduster@msn.com; web: www.twincityhobby.com

MISSISSIPPI

Meridian RC Speedway, Meridian, Mississippi 39302; Joe or Pearce, 601-483-7000

Small Cars Unlimited, Jackson, Mississippi 39212; Ed Hill, 601-372-3278; email: fast@smallcar-sunlimited.com; web: www.smallcar-sunlimited.com

X-Treme RC, Saucier, Mississippi 39574; Marty Capers, (228) 539-2004

MISSOURI

B&L Hobbies & Raceway, Park Hills, Missouri 63061; Bob Marler, (573) 431-9444

Hobbies In Motion Raceway, Springfield, Missouri 65803; Matthew Froning, 417-886-9621; email: MRKID-TURISMO@aol.com; web: rccars.guildhappy.com

North Missouri Raceway, Chillicothe, Missouri 64601; Billy Johnston, (660) 646-1120

Novelty R/C Raceway & Hobbies, Novelty, Missouri 63460; Rex & Jena Franke, 660-739-4530; email: rex_jena@noveltyrc.com; web: www.noveltyrc.com

Ozarks R/C Raceway, Springfield, Missouri 65803; Gene Rhodes, 417-873-9350(Track), 417-742-4376(Home); email: OzarksRaceway@aol.com

RCTRAX Racing Club of Central Missouri, Hallsville, Missouri 65255; Gary Phillippe, 573-886-3799 or 573-442-8183; email: gary.phillippe@verizon.com

Real Blue Vue R/C, Kansas City, Missouri 64133; Steve Hale, (816) 358-0238; email: hrealrc@aol.com; web: www.geocities.com/real_rc_raceway

Real R/C Raceway, Pleasant Hill, Missouri 64080; Steve Hale, (816) 540-5584; email: hrealrc@aol.com; web: www.geocities.com/real_rc_raceway

Showtime Raceway, Bakersfield, Missouri; Don Risner, (601) 203-1481

NEBRASKA

Hadar R/C Raceway, Norfolk, Nebraska 68701; John Schoenauer, (402) 644-7922

Hobby Town Raceway, Lincoln, Nebraska 68505; Chris or Chad, 402-434-5056; email: eaststore@aol.com

Hobby Town USA Raceway Park, Lincoln, Nebraska 68508; Chad or Chris, 402-434-5056; email: eaststore@aol.com

NESCAR Raceway, Grand Island, Nebraska 68801; Steve Blayney, 308-382-0920; email: spinkgi@nebi.com

O.N.R.O.A.D., Omaha, Nebraska 68104; CoRK Jacobs, (402) 556-8674

OTWG Carpet Raceway, Norfolk, Nebraska 68701; John Schoenauer, (402) 644-7922

The Salvation Army Speedway, Omaha, Nebraska 68164, 402-734-3414

NEVADA

Dansey's Indoor R/C & Hobbies, Las Vegas, Nevada; David Lugo, (702) 453-RACE or (888) 675-8963; web: www.danseys.com

Las Vegas R/C Raceway, Las Vegas, Nevada 89139; Patrick Quinn, 702-365-1396; email: PATRICK-QUINN98@lvcn.com; web: www.lasvegascrcraceway.com

T-Rix bikes & R-C shop, Elko, Nevada 89801; Gary Perkins, (775) 777-8804; email: MTNMAN14K@HotMail.com; web: N/A

NEW HAMPSHIRE

Lakes Region R/C Speedway, Gilford, New Hampshire 03246; Louie Blais, 603-524-2909; email: lakeregionrc@homestead.com; web: www.lakesregionrc.homestead.com/home.html

RT 106 Racepark, Pembroke, New Hampshire 03275; David Daniels, 603-224-7223; email: david@collectracing.com; web: www.106racepark.com

NEW JERSEY

America's Hobby Center Inc., North Bergen, New Jersey 07047; John Many, (201) 662-0777; web: www.ahc1931.com

Checkerboard Raceways, Elwood, New Jersey 08217; Ray Murray, 856-629-9413; email: RaysTrack@webtv.net

Family Hobbies Raceway, Vineland, New Jersey 08360; Linda Vogel, 856-696-5790

Jackson RC Club, Jackson, New Jersey 08527; Al Sardano, 732-364-6422; email: tazzdy@optonline.net; web: www.jacksonrc.com

Jefferson Speedway, Oak Ridge, New Jersey 07438; Mike, (201) 697-7525

Millville R/C Oval & Roadcourse, Millville, New Jersey 08332; William Denzot, 856-327-4640

On Trax Hobbies, Browns Mills, New Jersey 08015; Joseph DiGirolamo, (609) 735-0422

PottBellys R/C Speedway, Vineland, New Jersey 08360; Drew Anastasio, 856-875-2132; email: PottBellys_rc@yahoo.com; web: www.geocities.com/pottbellyrc

South Jersey Cost Controlled Racing, Sicklerville, New Jersey 08081; Ray Murray, 856-629-9413; email: RaysTrack@webtv.net; web: community.webtv.net/RaysTrack/SouthJerseyCost

SpeedPro Dragway, Elizabeth, New Jersey 07206; Albie Nizolek, 908-351-5080; email: funnycar176@aol.com; web: www.speedpro.org

The Race Place, Farmingdale, New Jersey 07731; John Fary, (908) 938-5215

Wacky RC Raceway, Roselle, New Jersey 07203; Tony Williams or Kimble Wright, (908) 241-6700

NEW MEXICO

Albuquerque R/C Off-Road Raceway, Albuquerque, New Mexico 87120; Bill Mitchell, (505) 243-0681(W); 898-6181(H); email: email-bill@home.com

Big Boys Toys Raceway, Albuquerque, New Mexico 87112; Isaac Garcia, 505-298-1023; email: yoklosi@aol.com; web: www.bigboytoys.theshoppe.com

NEW YORK

BarnStormers Speedway, Chester, New York 10918; Lou, 845-469-6468; email: iamstyma@hotmail.com; web: www.barnstormers.virtualave.net

Brennan's RC Hobbies, Vernon, New York; Bill or Tom Brennan, (315) 829-4930

Brooklyn Hobbies, Brooklyn, New York 11234; Chris Palermo, 718-951-2500; email: brooklynhobbies@aol.com; web: www.brooklynhobbies.com

Bruckner Racing, Bronx, New York 10465; Thomas Baffers Sr., (800)-288-8185

C&C Speedway, Binghamton, New York 13903; Eric Boyd, (607) 773-2044

Capital District Radio Controlled Stock Car Club, Loudonville, New York 12211; Peter Willis, (518) 482-7128; email: rcpete12211@yahoo.com; web: cdrcsc/homestead.com

Chipmunk Hill R/C Speedway, Theresa, New York 13691; Ted or Pete House, (315) 628-5065

Competition Hobby, Cohoes, New York 12047; Howie Cummings, 518-786-3622; email: hic300@aol.com

East Coast R/C Hobbies, Brooklyn, New York 11204; John Giangrande, 718-627-3814

Fastraks, Hogsburg, New York 13655; Mark Castonguay, (518) 358-3686; email: frogghob@northnet.org; web: www.fastraks.8m.com

HOBBY ZONE RACEWAY, OZONE PARK, New York 11417; BRIAN, SEAN, OR ADAM, (718) 641-9001; email: moonchaserwolf@aol.com

Lil Wheels Raceway, Oswego, New York 13126; Bill Meyer, 343-6566; email: lilwheelsraceway@hotmail.com; web: lilwheelsraceway.tsx.org

Long Island Raceway, Farmingdale, New York 11735; James, (516) 845-7223; web: www.raceway.com

MTW Raceway, Cato, New York 13033; Tim, 888-39-HOBBY; 315-626-2029; email: docsavage@mtwrcway.com; web: www.mtwrcway.com

PRO Speedway, Cattaraugus, New York 14719; Marc Pritchard, (716) 257-3101

Radio Hill Raceway, Dundee, New York 14837; Bill or Greg, 607-243-8641 (Bill); 607-243-7899(Greg)

Rampage R/C & Hobbies, Hyde Park, New York 12538; Brian Walker, (845) 229-1379

South Shore Hobby & Raceway, Patchogue, New York 11772; Benny or Bonnie, 631-758-5567; web: www.southshorehobby.com

TARMAC Ultimate R/C Raceways, Poughkeepsie, New York 12603; Todd Plass, 845-342-5409(Todd); 845-454-8276(Track-Sundays); email: toddp@tarmacraceway.com; web: www.tarmacraceway.com

Walt's Hobby, Syracuse, New York 13209; Bruce, 315-453-2291; web: www.walts-hobby.com

Willis Hobbies R/C Speedway, Mineola, New York 11501; Ken Ford, 516-746-3944; web: www.willishobbies.com

NORTH CAROLINA

Chapel Hill RC Assoc./Hungates RC Racing, Chapel Hill, North Carolina 27514; Tom Gabriel, 919-933-7671; email: chaphillrc@yahoo.com; web: www.chaphillrc.com

Chatham R/C Raceway, Bear Creek, North Carolina 27207; Dwight Fields, (919) 898-4518; email: chatham_rc_speedway@yahoo.com; web: www.chathamracespeedway.com

R.C.R. Speedway, Salisbury, North Carolina 28147; Ronnie Linker, (704) 637-2565

Race City Motor Speedway, Mooresville, North Carolina 28115; Ray Kelly, 704-660-FAST; email: Kellyrcms@cs.com; web: racecitymotorspeedway.com

Rosewood RC Speedway, Goldsboro, North Carolina 27530; Glenn Elam, 919-731-4734

Sandhills Raceway, Southern Pines, North Carolina; Mike Russel, 910-245-4450; email: mrmrc@mindspring.com; web: www.sandhillsraceway.com

Southern RC Motorsports Club, Shallotte, North Carolina 28459; Eddie Ferster, (910) 754-8528

The Antique Barn, Wilson, North Carolina 27893; Steve, (252) 237-6778; email: antiquebarn@esn.net

NORTH DAKOTA

Grand Forks Remote Control Racers, Grand Forks, North Dakota 58201; Dan Miller, 701-746-9910; email: dandmiller@juno.com; web: mule.puah.org/gfrcr

OHIO

AK Hobby & Raceway, Cincinnati, Ohio 45211; Tim Torre, (513) 661-7080; email: tim@akhobby.com; web: www.akhobby.com

American Ohio Sprint Car, Wickliffe, Ohio 44092; Gary Waldheim, 440-944-9966; web: www.aosca.8m.com

Black Swamp RC Car Club, Toledo, Ohio 43623; Riders Hobbies, 419-843-2931; email: ridersrcclub@webtv.net; web: www.blackswampc.cjb.net

CORCAR/ Sams Club, Galloway, Ohio 43119-8732; Bill Stevenson, (614) 870-7159

D&J R/C Raceway, Orrville, Ohio 44667; Don, (330) 682-4266

DeFosse Raceway, Ripley, Ohio; Greg DeFosse, (937) 377-2063

Extreme RC Raceway, Wheelersburg, Ohio; Kevin Rowe, (740) 574-4190; email: extremerc2000@yahoo.com; web: www.ohioxc.com

Hobbyland Raceway, Proctorville, Ohio 45669; Craig Harber, 740-886-0502 or 740-8868062; email: pitrowracing@webtv.net; web: hobbyland-raceway.homestead.com

KEY TO SYMBOLS

- | | | | |
|--|-------------|--|--------------------|
| | Indoor | | Concrete |
| | Outdoor | | Asphalt |
| | Off-road | | Minis & Micros |
| | Road course | | On-site hobby shop |
| | Oval | | AC power |
| | Dirt oval | | Auto lap counting |
| | Carpet | | Food available |

Circuit Teleguide ST Roch, ST Roch
De L. Achigan, Quebec J0K 3H0;
Gerald Beauchamp, 456-588-424;
email: gedoroam@coibca.net;
web: www.grcsr.com

Copetown Raceway, Copetown,
Ontario; Adam Filipowicz; email:
adamfilip@home.com;
web: copetownraceway.8k.com

Dynamic Hobbies, Nepean, Ontario
K2E7S4; Fred Zufelt, (613) 225-9634;
web: www.members.home.net/rcot-tawa

HobbyHobby P.L.R.C., Mississauga,
Ontario L5M 1K8; Tom Bakonyi,
905-858-7978; email: info@hobbyhob-
by.com; web: www.hobbyhobby.com

Honda House Motor Speedway,
Chatham, Ontario N7M 1P9; John
Elliot, (519) 354-5530

IROCC, Victoria, British Columbia V9B
5W9; Daryl Jones, (250) 478-8013;
email: djbones@shaw.ca

Johns Jump & Rind R/C Track,
Waterville, Nova Scotia B0P 1V0; John
Egan, 902-538-8920; email:
john.egan@ns.sympatico.ca;
web: www.jjagrc.com

J-T International Raceway, Napanee,
Ontario K7R 8A1; N. O'Neill,
(613) 354-0099

Kays Hobbies R/C Raceway,
Moorefield, Ontario N0G 2K0; Doug
Kay, 519-638-9990; email:
dougk@golden.net;
web: www.kayshobbies.place.cc

Leading Edge R/C Speedway,
Kingston, Ontario K7M 3Y5; Mike and
Tony Daicra, 613-389-4878

Mid-Canada R/C Auto Racing,
Winnipeg, Manitoba R2J 4E6; Jason
McBride, 204-231-3324; email:
hjmcb@escape.ca; web: www.geoci-
ties.com/midcanadarcautoracing

Miniatures & Passions, Ste. Therese,
Quebec J7E 2B4; Gilles Lachance,
(450) 979-7989

Mini-Z Hobby Shop, Markham, Ontario
L3R 0W4; Brian Pong, (905) 940-0898;
email: info@minizhobbyshop.com;
web: www.minizhobbyshop.com

Prince George Radio Controlled Car
Club, Prince George, British Columbia
V2M 5R9; Doug Waller, 250-561-0035

R/C Champ Raceway, Scarborough,
Ontario M1H 3A4; Ben, Matthew or
Louie, (416) 289-8717;
web: www.rchamp.com

R/C Fanatic, Charlesbourg, Quebec
G1G 3Y4; Marc Page (Club President),
418-265-2678; email:
infos@rctfanatic.com;
web: www.rctfanatic.com

Recreation R/C Raceway, Prince
George, British Columbia; Doug Waller,
(604) 561-0035

Steeltown Speedway, Binbrook,
Ontario L0R 1C0; Trevor Harrison,
905-692-3407 (ask for Trevor); email:
the_prodigy@zdnetwork.com; web:
www.geocities.com/s_speedway

Sudbury Ontario Auto Racing, Val
Caron, Ontario P3E 1E6; Brad
Peacock, 705-897-1435(Brad);
email: brad@rendakyle@sympatico.ca

The All New R.C. World, Hamilton,
Ontario L0R 1W0; Dave, Larry or
Brian, (905) 765-2301 or
(905) 333-3297

Vancouver R/C Road Racers,
Coquitlam, British Columbia V3E 1K9;
Roger Brown, (604) 945-3888

CHILE

Nico Prohens Off/On Roaders, Ovalle,
4 Region 1; Nicolas Prohens,
(56) 53-711579; email:
nprohens@entelchile.net; web:
38939070.home.icq.com/

OFF/ON ROADERS, Santiago, Region
Metropolitana 1; Mauricio Wetter
Ferrer, (56) 09-8404174;
email: mwetter@entelchile.net;
web: 38939070.home.icq.com/

COLOMBIA

Club De Automodelismo Colombiano,
Sanatafe De Bogota D.C., Bogota;
Jorge Delgado, 1-6130588

Garoso Raceway, Cucuta; Gabriel
Rodriguez, 975-751892

COSTA RICA

Club de Automodelismo RC10 Costa
Rica, San Jose, San Jose; Osvaldo
Averhoff A, (506) 2862353;
email: nitrocr@hotmail.com

Hobbymania, Hispanidad San Pedro,
Montes de Oca; Randall Jimenez, 506-
280-9078; email:
hobbymanias@hotmail.com;
web: www.hobbymanias.com

CYPRUS

Racing Model Club, Nicosia; Andrea
Sotiriou, 493186; fax 493229

DENMARK

Brondby Motor Club, Brondby 2605;
Soren Boy Holst, 45-36-472-462

Holstebro R/C Buggy Club, Holstebro
2600; Michael Brusholt, 45-97-412-734

Klub 144 Raceway, Lyngby 2800;
Henrik Carstens, 45-42-88-3691

Rainbow Raceway, Copenhagen
2600; P. Christiansen, 45-52-848-504

Thor Minirace Odense, Odense; Ulrich
Rasmussen, 45-65-303-707

DOMINICAN REPUBLIC

Adoca R/C Speedway, Santo
Domingo, (809) 220-5266

La Barranquita R/C International
Speedway, Santiago, (809) 582-2303

ENGLAND

Chessington Radio Car Club,
Worcester Park, Surrey; Ian Spiller,
0252-20657

Hampshire Racing Center,
Basingstoke, Hampshire; Tony Eudola,
44-1276-61402

Hinckley RCCC, Hinckley,
Leicestershire; Bruce, 01455-890580

Snetterton Market Model Car Club,
Norwich, Hampshire NR16 2JU; Lee
Shore, 01760 724857;
email: kekezza@fsmail.net;
web: www.wheelspins.co.uk

Worcester Model Car Club, St. John's,
Worcester WR2 6Q9; Mr. Hardy

FRANCE

Auto Electron, Limoges 87000; M.
Boudoul, 55 062763

Auto Model Club de l'ouest, Lojehet
29470; Peuziat Michel, 98071764

Crame Roncq, Mons el Baroeul;
Michael Hondekyn, 33-20042755

CSRM, Lyon 69009; Pierre-Yves
Montroy, 06 78880852

Lorgies Bolides, Lorgies 62840;
Hourdequin Sabine

GERMANY

Dreykorn Raceway, Lauf 91207;
Hermann Hensel, 09123-81457

MAC Zweibruecken, Hueffler 66909;
Matthew Bailey, 011-49-6384-1388;
email:
matthew_w_bailey@hotmail.com; web:
www.geocities.com/matthew_w_bailey

MC Koln, Worrigen 50769; Ralf
Habel, 02733-477493

Mini Car Club Dortmund, Dortmund
4600; Roland Schwan, 0231/213609

Oberhausen-Alttaden, Oberhausen
46099; Josef Holl, 0208-403676

Panik Raceway, Troisdorf 53844;
Guido Kraft, 0224-400259

GUAM

R/C International Raceway, Agana;
Robert (Buddy) Simpkins,
(671) 477-3207

HONDURAS

Autodromo Accion, San Pedro Sula;
Colonla Rivera Hernandez; Eduardo
Hondal, (504) 52-2061

HONG KONG

H.K.R.C. Model Car Racing Club,
Hong Kong; Alex Chan,
(852) 659-2822

Kingsville Buggy Arena, Shatin; Pak
Yeung, (852) 607-0828

INDONESIA

1st Circuit, Surabaya, 62-31-5681965

Ancol, Jakarta, ACT 14350; Andre
Supryana, 62 21 6506040;
email: andre@cbl.net.id; web:
www.aucv.com/ja

Jakarta International Twin Circuit, Dki
Jaya, Jakarta; Fayakhun Andriadi,
6221-751243g; email:
fayakhun@soon.com

Karinda Off-Road R/C Car Model
Circuit, Jakarta-Selatan 12440;
Wiwid W. Soedarmadi, 62-21-
7900878

Pondok Cabeircut, JL. Kunir No. 83,
Jakarta; Ali Agus Salim, 7403568-9;
fax 7491533

Sentul World Hobbies, Hartanto; Ian
Sentul, 42 62-21-751-2439

ISRAEL

Ircca Off-Road, Rahanana; Yaron
Zafris, (972) 030549937

Nahshoneat, Haifa 32809; Golan Levy,
(972) 039386444 or (972) 04231252

ITALY

AF MODELS RINGS, COLLENO, ACT
10093; ADRIANO FORATO,
+39 335.82.58.434; email: afmod-
els@tm-net.it; web: www.afmodels.com

Kadena R/C Car Club, APO, AP
96367; Ron Nason, 011-81-611-733-
1334; email:
Ron_Nason@hotmail.com; web:
home.attmil.ne.jp/b/Carmen_Nason/ho-
me.htm

Xiwakuni R/C Track, FPO AP 96310-
0978; David T. Eck, 81-6117-53-3662

Yokota R/C Racers, Tokyo APO AP
96326; Donnie Leornas, 81-3-11-757-
2012 or 755-2272

Zama Off-Road Raceway, APO AP
96338; Ken Campbell, 81-3117-63-
8478

KUWAIT

Inferno DX 4WD Track, Ahadi 61002;
Yousuf Acqatari

LEBANON

Wild Willy RCC, Beirut, 00961-4-
403751

MALAYSIA

ACME SPEEDWAY, Georgetown,
Penang, PB 10000; MOEY CHEE
CHONG, 604-2613175 & 6012-
4189388; email: s_jamm@hotmail.com

Jump Square Arena, Selanhor;
Thomson Chong, (603) 656-2513

Niko Sales & Service Centre, Johor
Bahru; Niko Cheng, (607) 234-3615;
email: niko3@pd.jaring.my; web:
www.niko.com.my

Titilwangsa Raceway, Kuala Lumpur;
R.A.C.E. Sdn Bhd., 03-2614496

TP Racing R/C Raceway, Selangor;
WONG S00 WEI, +603 56388160;
email: wong@tp-racing.com

MEXICO

Alces Off Road, Ensenada, BC 22830;
Jorge Bustamante, 667-6-1476, 61477,
86729

Baja Jr of GDL, Tlaquepaque, Jalisco
44000; Guillermo Asencio, 01-3825-
3169 / 3671-5432; email: memoasencio@prodigy.net.mx

Cinamo Coca-Cola, Guadalupe, Nuevo
Leon 67120; Sergio Garza, 83- 35-70-
09/79-32-33

Club Kyosho de Automodelismo
Departino, Mexico, D.F. 04330; Jorge
Perez Holder, 525-5689-4150; fax
525-5544-7133; email:
spedshop@data.net.mx

Desstrea Racing Club,
Aguascalientes, Aguascalientes; Luis
Lopez, 44 98 961296; email:
luis_lopez@jabil.com

Hobby Centro, Guadalajara, JAL
45550; Alejandro Ortiz Del Toro, 36-21-
46-28

Hobby Model's Raceway, Morelid,
Michoacan 58260, 431-5-01-22

Hobby's Formula., DF 01120, 905-
502-3620

Jaguar R/C Club, Puebla 72150;
Denise or Chiro, 22-31-00-91, 22-33-
00-94

La Hielera, Queretaro, ORO 76160;
Jorge Morelos Rabell, 42-12-15-25

Micromotori Club, Jalisco, Jalisco
44640; Francisco Ortiz Sevilla, 52-
36418672; email: fstmyn@hotmail.com

NITRO RACERS, san jose del cabo /
los cabos; FRANCO MEZA,
(114) 1424422; email: tcstafe@prodigy.net.mx

Pista Casino, Cuernavaca, Morelos
16507; Luis Duhart, 73-19-12-38

R/C Racing Club, Zapopan, Jalisco
44560; Fernando Hernandez,
3-616-73-47

Tony's Track, Culic n, Sinaloa;
Guillermo Prieto, 67-165708-168141

NETHERLANDS

ERCE Eindhoven, Eindhoven, ACT
5627n; Henk Fick, 040-2480607;
email: info@erceracing.nl;
web: www.erceracing.nl

H.F.C.C. Hollandia, The Hague; G. de
Jong, 031-070-3679820

M.A.C. Vlymen, Nieuwkuijk; Arjan van
de Graaf, 31-416-376298

R.C.T.D. Circuit, Dordrecht, Zuid
Holland 3316 GN; Jan van Kooy, 31-
78-618-11-84; email: pkrcing@bit.nl;
web: www.pkrcing.nl

NEW ZEALAND

Capital Model Racers, Lower Hutt;
Roger Whitmarsh, 04-566-5714

Counties R/C Raceway, Pukekohe; R.
Northcott, 09-23-86904

Harewood Radio Control Car Club,
Christ Church; Dean Johnson,
09-0- 3880 344

Papakura Indoor R/C Car Club,
Auckland; Colin Perry, 09-298-4711

Western District R/C Off-Road Car
Club, Auckland; Chris, 09-838-5201

NORWAY

Aurskog R/C Club, Aurskog; Tommy
Gjeleseth, 47-63-86-21-61

Dalen Raceway, Molde; Johnny
Reitan, 94 64 52 95

Hadeland Raceway, Gran; Dag Bakke-
Nilssen, 61330405

Lornskog RC Bane Track, Sorihaavna;
Terje Rosemo, 47-952-44269

Store-Baller Raceway, 3/17/99
61330225; Ola Raastad

PHILIPPINES

Boyel R/C Hobby Shop, Rizal; Jose
Chua, 721-2555

Philippine F1/Touring Club, Quezon
City, Manila 1156; Raymond
Aguilar/Ron Vallator, 896-64-15-23-30-08

R/C Toy Box Hobbies & Tracks LLC, East Haven, Vermont 05837; Raymond Richard, 802-467-8458; email: rctoybox@excite.com; web: myrctoybox.50megs.com

VIRGINIA

Brad's Hobbies, Staunton, Virginia 24401; Brad, (540) 885-3642; email: brads_hobbies@erica.net

Brown Brothers Hobbies, Dumfries, Virginia 22026; Joe or Bob Brown, 703-221-5746; email: joe@bbhobbies.com; web: www.bbhhobbies.com

DRCW Raceway, Virginia Beach, Virginia 23454; Les Modlin, 757-340-6681; web: www.debbiesrcworld.com

Griffin Hobby & Raceway, Bristol, Virginia 24201; Danny Griffin & Greg Johnson, (540) 466-3652; email: grgjohn@yahoo.com

Hampton RC Speedway, Hampton, Virginia 23065; Steve or Bill, (757) 723-1884

Hampton Roads R/C Drag Club, Virginia Beach, Virginia 23452; Garry Nelson, 757-399-8645; email: Garry@qsdrracing.com; web: www.HRRDC.com

KC's Radio Control & Repair, Lynchburg, Virginia 24503; Curtis or Kim Wright, (804) 384-8596

Linville Hobbies Raceway, Linville, Virginia 22834; Jerry Shenk, (540) 833-2222; email: linvillehobbies@juno.com; web: www.linvillehobbies.com

Olde Towne Hobby Shoppe, Manassas, Virginia 20110; Jeff Gough, (703) 369-1197; web: www.oldeTownehobby.com

Roanoke R/C Club, Salem, Virginia 24153; Chad Trent, 540-314-6257; email: roanokerc@aol.com; web: roanokerc.cjb.net

Shamroc Raceway, Winchester, Virginia 22601; Denise Fletcher, 540-869-4162

Stream Hobby Shop, Newport News, Virginia 23605; Rusty Kennedy or Jerry Moore, (757) 591-0720

STREAM HOBBY SHOP, NEWPORT NEWS, Virginia 23605; RUSTY KENNEDY, 757-591-0720; email: STREAMRC@AOL.COM; web: STREAMHOBBYSHOP.COM

The Tiltyard, Dayton, Virginia 22821; Homer, 540-828-3476; email: homer@tiltyard.com; web: www.tilyard.com

Thunder Road RC Speedway, Gordonsville, Virginia 22947; Robert Bingle, (804) 296-6549; email: rwb3@virginia.edu; web: www.thunderroadrc.com

WASHINGTON

A-Main Raceway, Vancouver, Washington 98685; Monty Coleman, (360) 571-8404; web: www.amainraceway.com

Burien Toyota R/C, Seattle, Washington 98148; Ray Meek, (800) 654-6456

Cedardale Raceway, Mount Vernon, Washington 98273; Craig, 360-755-9464

Fantasy World Raceway, Tacoma, Washington 98408; Dave Kleinman, (253) 473-6223; web: www.fantasyworldhobbies.com

Four Season R/C Racing, Olympia, Washington 98506; Gary and Sharon Brown, (360) 491-2430

Hank Perry Raceway, Spokane, Washington 99023; Hal Hudson, 509-879-3503; email: halshudson@msn.com

HobbyTown USA, Tacoma, Washington 98408; HobbyTown USA Shop, (253) 474-7787

HobbyTown USA, Lynnwood, Washington 98037; Rich or Jamie, 425-774-0819; email: RHOBBYTOWN@AOL.COM

Paradise Raceway and Hobbies, Spokane, Washington 99207; Mark, 509-483-1843; email: paradiserc@hotmail.com; web: www.websellers.com/paradise

Race City, Auburn, Washington 98002; Bruce, (253) 939-2515; email: auburn@pacifier.com

Rain City RC Raceway, Mukilteo, Washington 98021; Pete or Debbie Cartwright, 425-438-2454; email: info@raincityraceway.com; web: www.raincityraceway.com

Redmond Hobbies Raceway, Redmond, Washington 98052; Stan Ng, (425) 885-3639; email: info@redmondhobbies.com; web: redmondhobbies.com

Schmidt's Auto Parts, Marysville, Washington 98271; Jon Failla, (360) 653-8838; web: www.schmidtsrccraceway.com

Spokane Indoor Raceway, Spokane, Washington 99212; Brian Batch, 509-487-2122

Tacoma R/C Raceway, Tacoma, Washington 98406; Scott Brown, (253) 565-1935; web: www.tacomarcraceway.com

West Coast Hobby & Raceway, Richland, Washington 99352; Darren Shank, (509) 375-4995

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Burr Fab R.C. Raceway, West Union, West Virginia 26456; Mark Travis, 304-873-2487; email: burrfab1@cs.com

Fulton's R/C Raceway, Wheeling, West Virginia 26003; James Fulton, (304) 233-5355

Mountwood Raceway, Waverly, West Virginia 26184; Ryan Taylor, (304) 295-3217; email: ryan@ovrccc.com; web: www.ovrccc.com

Quiet Dell Raceway, Fairmont, West Virginia 26554; Darris, (304) 366-1441; email: Tateracing@aol.com

WISCONSIN

ABC R/C Inc & Raceway, Waukesha, Wisconsin 53186; Dick Mathieson, 262-542-1245; email: Help@abchrchobby.com; web: www.abchrchobby.com

Best's Hobbies, Appleton, Wisconsin 54914; Peggy, 920-734-5244; email: appletonrc@hotmail.com; web: www.besthobbies.com

Gary's Hobby Center, Racine, Wisconsin 53403; Bill Phalen, 262-554-8884

Hobbytown USA - Revolution Raceway, Sheboygan, Wisconsin 53081; Kenny, (920) 452-0801; web: www.hobbytownsheb.com

KDM Raceway, Abbotsford, Wisconsin 54405; Kevin Michlig, 715-223-4414; email: kdmhobby@pcpro.net; web: kdmhobby.homestead.com/kdmhobby.html

MARCCA Raceways, Monticello, Wisconsin 53570, 608-243-1778; email: asylumrc@yahoo.com; web: www.marcca.com

Mid-West Tri-Clone/Tri-Clone, West Bend, Wisconsin 53095; Dave Hilpert, 262-334-0429 or 262-626-2238; email: mwtrc@hnet.com; web: www.triclone.com

Pro-Star Racing, Green Bay, Wisconsin 54301; Chuck or Terry, (920) 494-1233 or (920) 469-5566

S&N's Tracks Hobbies and Raceway, Milwaukee, Wisconsin 53209; Scott Ernst, (414) 351-1910; email: sernst@tracksd.com; web: www.tracksd.com

The Shorthalf Raceway, Eau Claire, Wisconsin 54701; Scott Schoettle, 715-838-8350; email: Scottschoettle@mcleodusa.net

WYOMING

Xtreme Hobbies Raceway, Gillette, Wyoming 82718; Krieg Balls, 307-682-6077; email: xtreme@vcn.com

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Circuit M.R. Models, Buenos Aires 1428; Maximiliano Roballos, 54 11 4557 1000, fax 4780 1677; email: info@kyosho-argentina.com.ar; web: www.kyosho-argentina.com.ar

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A.C.T. Remote Control Car Club, Kambah, ACT; Rob Jorgensen, 61-2-6231-9925; email: bjorgo@isr.gov.au; web: users.bigpond.net.au/grj/actrcc.html

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Lakeside R/C Racing Car Club, Lansvale, New South Wales 2166; R. Bartolozzi, 62-2-907-9800

Melton Electric Circuit Car Association, Melton, VIC 3337; Arthur Joslin, 61-3-9747-8805

Monaro Radio Control Car Club, Queanbeyan, New South Wales 2902; Graham Brown, 02 6241 3070; email: gbrown@webone.com.au; web: www.webone.com.au/~gbrown/mrcc/iindex.html

NSW Indoor R/C Raceway, Hurstville, Sydney 2220; Anthony Lee or Walter Ly, 02-9585-8810

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TFTR - Templestowe Flat Track Racers, Templestowe, Victoria 3106; Nigel George, see website; email: tftr@imagefile.net; web: drive.to/tftr

The Bayside Raceway, Brisbane, Queensland 4178; Nigel Bell, 07 3893 1864; email: mwr1@dingobluen.net.au

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MBV-Kampenhout, Kampenhout B1910; Frank Mostrey, 0-16-65-75-18

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Hobby Planet Racing Club, Campinas, SP 13091901; Daniel, Helio, Luciano, 019 258 2768

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C.A.R.C.A.R., Calgary; Simon Smith, (403) 280-9040; web: www.drive.to/carcar

Cactus Speedway, Ruthven, Ontario N0P 2G0; Terry Torell, (519) 735-7122; email: osthunder@sympatico.ca; web: www.mnsi.net/~glenn/sparc.htm

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KEY TO SYMBOLS

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| | Indoor | | Concrete |
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| | Off-road | | Minis & Micros |
| | Road course | | On-site hobby shop |
| | Oval | | AC power |
| | Dirt oval | | Auto lap counting |
| | Carpet | | Food available |

Circuit Teleguide ST Roch, ST Roch De L' Achigan, Quebec J0K 3H0; Gerald Beauchamp, 450-588-4254; email: gedoroam@colba.net; web: www.grcsr.com

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Rainbow Raceway, Copenhagen 2600; P. Christiansen, 45-52-848-504

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Worcester Model Car Club, St. John's, Worcester WR2 6Q9; Mr. Hardy

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Desestreza Racing Club, Aguascalientes, Aguascalientes; Luis Lopez, 44 98 961296; email: luis_lopez@ajabil.com

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Hobby's Formula, DF 01120, 905-602-3620

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La Hielera, Queretaro, QRO 76160; Jorge Morelos Rabell, 42-12-15-25

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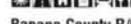
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Grand Prix Electric Car Club, Bokisburg, Gauteng; Gary Gibson, 27-11-826-1720



Helderberg Radio Control Car Club, Somerset West, Cape Province; Andre Hollander, 024-51-2865



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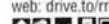
Staffanstorps Highway 1:8 Track, Staffanstorps 245 45; B'rje Petersson, 46 0 46-256832



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THAILAND

Hobbica Circuit, Plong Maduea, Maung, Thailand 73000; Mr. Supakiet Thuwachardpanich, 66-34-258808; email: hobbica@yahoo.com



Hot Rod Raceway, Bangkok 10310; Mr. Vichai Vongphate, (662) 8602922-5



TURKEY

B&B OTO G ven Raceway, Istanbul, 0216-4186118, or 0216-3490742



BASKENT OTOPARK RACEWAY, ISTANBUL, ACT 81190; KAAJ CIFTGI, +90 (216) 3486332 +90 (532) 3558626; email: taneri@superonline.com



Capital Speedway, Ankara; Apo, 903124401806; email: dosdemir@ixir.com



Mustang Hobbies Raceway, Istanbul; Murat Esibat r, 902163863171 (Tha); email: dosdemir@ixir.com; web: www.mustanghobbies.com.tr



VENEZUELA

R/C Mariche, Caracas DF 1070-A; Bruno Morganti, 58-02-241-3969 or 241-4993



Santa Paula R/C Club, Caracas; Abecasis or Franco Agrusa, 02-2423954 or 02-4510314



WEST INDIES

Island Raceway, St. Andrew, Jamaica; Rodney Littau, (809) 926-7034 or 927-1198



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| <input type="checkbox"/> Dirt | <input type="checkbox"/> Automatic lap-counting |
| <input type="checkbox"/> Carpet | <input type="checkbox"/> Food available |

KEY TO SYMBOLS

- | | |
|-------------|--------------------|
| Indoor | Concrete |
| Outdoor | Asphalt |
| Off-road | Minis & Micros |
| Road course | On-site hobby shop |
| Oval | AC power |
| Dirt oval | Auto lap counting |
| Carpet | Food available |

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backlot

RANDOM RADIO CONTROL RAMBLINGS

BY PETER VIEIRA

BIG BACKLOT PAGE O'FUN

Bored between qualifiers? Got nothing to do in study hall? Boss can't see what you're doing behind that mound of papers? Why not kill a few minutes with the Backlot Page O' Fun? Crayon not included.

The Name Game!

Sure, you know all the big names in RC. But can you pronounce them correctly? You never know, you might actually run into Mr. Tamiya, and you wouldn't want to shame yourself by mispronouncing his name!

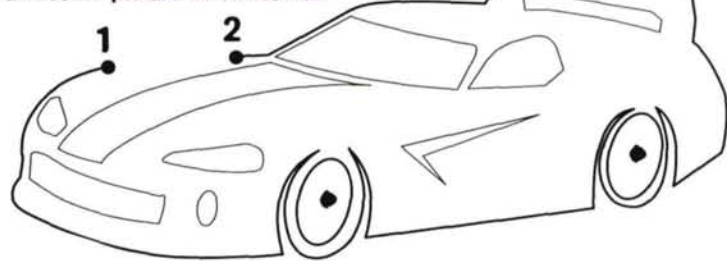
- | | | |
|----------------------|------------------|----------------------|
| 1. Tamiya | 4. Futaba | 7. HPI |
| (a) Ta-MY-a | (a) Foo-taba | (a) H - P - I |
| (b) Ta-ME-a | (b) Foo-too-ba | (b) hippie |
| (c) Tam-ee-ya | (c) Few-taba | (c) Both are correct |
| 2. Losi | 5. Kyosho | |
| (a) Lo-see | (a) Key-oh-show | |
| (b) Lo-zee | (b) Kyo-show | |
| (c) Law-see | (c) Kie-oh-show | |
| 3. Schumacher | 6. Mugen | |
| (a) Shoe-mocker | (a) Muggin | |
| (b) Shoe-maker | (b) Moo-gen | |
| (c) Shoe-matcher | (c) Mew-gen | |

ANSWERS AT BOTTOM OF THE PAGE

Self-esteem building

Connect the Dots!

Kids! Connect the dots to draw an awesome picture of an RC car!



Wow! What a great job you did! You're special!



A-MAZE-ING RACE!

«START

Help Jimmy drive to the finish line!

Note: Jimmy can't drive to save his life, so he might not make it there at all.

THE DISAPPEARING PYLON

Close your left eye, and stare at the car with your right eye. Slowly bring the page closer to your eye as you stare. The corner cone will disappear!



First person to email backlot@airage.com with the explanation for this phenomena wins a prize.

RC WORD FIND

See if you can find these hidden words:

- | | |
|----------------|-------------|
| Speed control | Piston |
| Qualifier | Servo |
| Lap time | Transmitter |
| Modified motor | |

AGLDONTTYRNCBRIYLJHSWAMHLCBVM
WASTEQTUIREWSDFGHJKMNBVCIOLEH
TRXCHYOURJHGFDCVBGFDELPOINMYT
TIMETHGFVCXSDEUYOUIUKLMNYZXQAS
CXSDETHOSERUYOUIUKLMNGHJKMNBSD
WORDSTUIREWSDFGHJKMNBVCIOLEH
WSDFARENTAGLEINSTYRNCBAGLCIOL
INLCBRIYTYRNCBRIYLJHSWAMHLCBVM
BRIYHEREUIREWSDFGHJKMNBVCIOLEH

ANSWERS: 1-B, 2-A, 3-A, 4-A, 5-B, 6-C, 7-A (AW, C MON).

FINISH»